THE MAGAZINE For ATARI(TM) Computers

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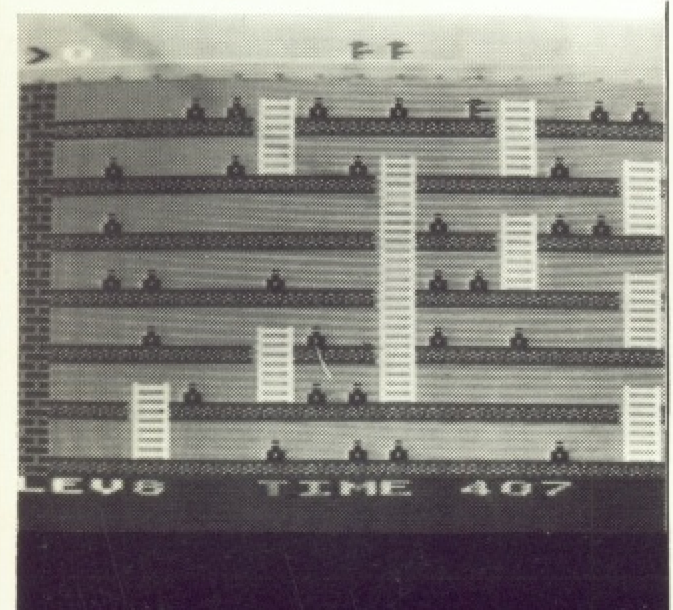
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and lots more!

Gangsters



Rescue Mission



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Page 6 is a users magazine and relies entirely on readers' support in submitting articles and programs. The aim is to explore Atari computing through the exchange of information and knowledge and whilst we cannot, unfortunately, pay for articles published, we hope that you will gain satisfaction from seeing your work published and in turn we hope that you will learn from articles submitted by other readers.

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Editorial

Where are you Atari?

"I have no doubt that much more will develop between my writing this and publication". Those words came from my last editorial concerning the takeover of Atari. Well, two months have passed and what has happened? Nothing much. True prices have been reduced to make the Atari line the best value computer system that's ever been, but if it is not advertised what is the point? Stop dragging your feet, Atari, and for the sake of our(and your, future *advertise*. Don't sit and wait for the customers to come to you, the past two years have proved that it won't work.

Many thanks to all those of you who wrote to Atari as requested. It turns out that Product Support is still alive although not in quite so lavish a form. I had calls from Robert Katz and Les Player, both on the technical support side, to say that support is still there but may take a little while to get up and running again. I promised to publish a letter from Robert Katz outlining what has happened and what will happen but the letter has not arrived. Pity.

Your letters were much appreciated at Atari and took them a little by surprise. There is no doubt that some people, at least, at Atari know that you still care. All it needs now is for Atari to recognise that it cannot survive in isolation and that encouragement of third party supporters of Atari will play a vital part in their campaign to become the world's number one. Atari is still the least supported computer in this country and what is the point in buying a great computer if you then sit at home thinking that you are the only one who did!

Apologies...

Sorry about the last issue. Many subscribers received their copies late, several had missing or duplicated pages and the print quality was awful, such that the listings were virtually unreadable in places. I won't go into details, just say that it was entirely down to the printer. This issue we have a new printer and, hopefully having made the right choice, such problems are behind us. I have just about calmed down!

Finally, thanks to all of you who wrote with congratulations on the 'arrival' due on 27th September. He actually arrived a couple of weeks early on 11th September. This issue has been the hardest of all to put together!

Les Ellingham Editor

News and Views

Lots of rumours in the press, particularly the Financial Times, about what Atari 'might' be doing, including bringing out new 8, 16 and 32-bit machines. The 16 bit machine is said to be one which Atari had developed before the takeover. Latest reports suggest that Atari have tripled their output of 800XLs in Taiwan ready for the Christmas market. Several sources over here report having seen a 1450XLD at Atari headquarters for evaluation. Certainly Atari have *something* that they are keeping under wraps and maybe by the time that you read this, we may all know what.

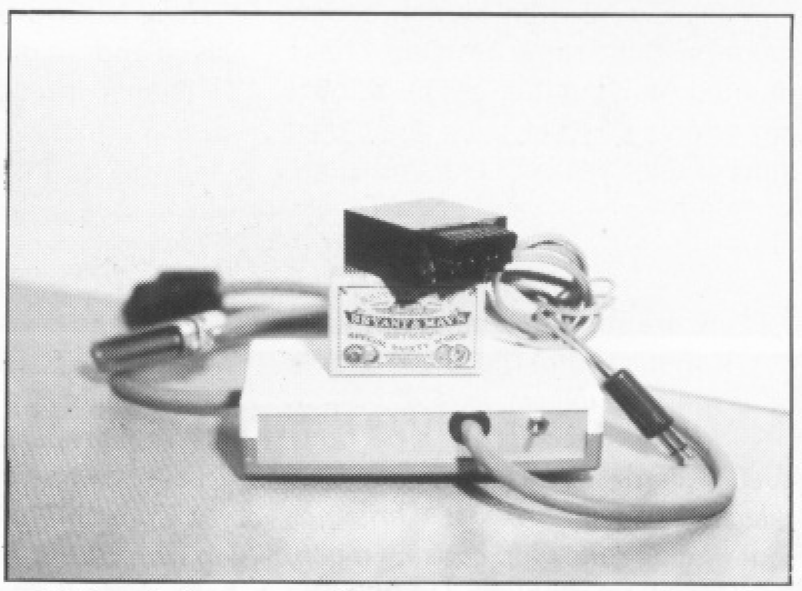
Atari have cancelled all of their Service Centre contracts for In-Warranty repairs and will in future replace any faulty unit that is under warranty. The intention is that you return the unit to your supplier who will replace it from stock. One problem is that exchanges will only be like for like so if your dealer runs out of 400, 800 or 600XL machines, as is likely, you will have to return the unit directly to Atari. Service Centres will still do out of warranty repairs and Atari will continue to provide technical backing, training and spares.

We recently received some information from Broadcasting Support Services concerning BASICODE 2+ which is used by Radio 4's Chip Shop for broadcasting software. Twelve different micros are supported but not Atari. If you are interested in downloading broadcast software write to Broadcasting Support Services, 252, Western Avenue, London W3 6XJ and tell them. Or you can ring 01 992 5522.

Micro Research who have advertised printer interfaces in previous issues have gone into liquidation so don't bother to reply to their ads!

Several new items have been announced by Optimized Systems Software Inc., the only American company to send us product information. The MAC/65 ToolKit is an extensive collection of macros designed specifically for use with either disk or cassette versions of the MAC/65 assembler. The ACTION! ToolKit enhances ACTION! programming capabilities with routines which allow player/missile graphics, turtle graphics, joystick input, advanced I/O operations and much more. THE WRITER'S TOOL is a new word processor with built-in mail-merge, insert and typeover modes and compatibility with any DOS in any density. Single key commands cover all enhanced printer commands and the package supports most Atari-compatible printers. Comes as a step by step tutorial, reference manual, handy reference card, cartridge and disk. Availability of these products in the U.K. is not known at present but you should try the retailers in the GOTO DIRECTORY or you can write to O.S.S. for more information at O.S.S. Inc. 1221-B Kentwood Avenue, San Jose, CA 95129, U.S.A.

NEW BLACKTHORN INTERFACES



Pictured here are the new cassette interface from Blackthorn which allows a normal low-cost data recorder to be used with your Atari, and the redesigned printer interface. The printer interface has been reduced in size to approximately 5" x 2½" x 1¼" and has longer cables of 22" to the computer and 35" to the printer. It is now powered directly from the computer and works on both 400/800 and XL models. The printer interface is £69.95 and the cassette interface £16.00 fully inclusive.....

Competition Winners page 11

LOCK-UP

Dear Les,

Most people who own an Atari computer have experienced the famous 'Atari lock-up' bug where the keyboard will cease to allow you to type anything even if you press system reset. Usually it occurs when deleting a line or part of a line near the beginning of a program. All you can do is switch off and start again.

The 400 and 800 models do it but what about the XL range? I tried a 600XL out in a store last Christmas and the same thing happened. Nevertheless I traded in my 400 for a 600XL elsewhere and Atari promised me that the new range did not have the lock up problem, but my local Service Centre tells me that the new range is just as bad and my machine is just as bad. In fact I have a program that I can make two alterations to and it will lock up every time.

It seems unbelievable that a company like Atari could continue to make a product with a fault for over four years and then launch a new model with the same problem. I have phoned Atari but they still insist that I am wrong and yet even their own Independent Service Centre disagree!

Stephen Taylor,
London

°° *There are still some bugs in the XL but Atari insist that the original lock-up problem, which was a bug in BASIC, was cured. There were however several (thousand?) 600XL's released just before last Christmas that had a faulty chip causing a very similar lock-up problem. This became known as the 'maths pack lock-up' and Atari exchanged all machines that had the fault. It could be that your machine is one of these. There again it could be that the bug is still in BASIC for Atari have now released, in the States, a Revision C BASIC on cartridge for the XL series. Owners in America can get a copy by quoting their serial number and sending $15 to the Customer Relations department. Wouldn't it be nice if Atari UK made this available but seeing as we never saw the Revision B Operating System or the Revision B BASIC there seems little hope.*

HOUSE OF SECRETS

Dear Les,

Thanks for publishing my program House of Secrets. I even had someone phone who had typed it in successfully to compliment me on what a good program it is!!

The reason for writing is that several people had problems in fitting in some of the long lines such as 318. The answer is to POKE 82,0 before typing and leave out all spaces between the commands or numbers, e.g. line 318 would look like 318ONX GOSUB350,400 etc.

You can also abbreviate commands with the exception of ON GOSUB or ON GOTO which produce errors.

I think these hints are worth mentioning as they are useful tips on their own.

David Blease,
Weymouth

°° *There is also one line in the program which ends in quotes and will not go in even with all these tricks. The answer is to leave off the final quotes, they will be inserted automatically when you LIST or RUN the program.*

POLE POSITION

Dear PAGE 6,

The following points may be of interest in reply to Roy Lynch's letter in issue 10 concerning Pole Position.

It is possible to complete a full eight lap race on the Atari GP circuit as we have done it dozens of times registering a top score so far of 113,200 in an overall time of 460.59 seconds. The technique is simply to slow down as and when necessary (very frustrating) with a view to keeping the 'Bonus Time' counter below 39 seconds up to lap 5 and under 34 seconds on lap 5 and above as you cross the line.

The time mentioned above was achieved with the aid of what we call 'the Boost', a situation where your speed goes over and beyond the standard maximum of 195 mph and something that seems to occur randomly during game play on Atari GP level. We have recorded speeds up to 233 mph with the aid of this feature in qualifying laps. We would be very interested to learn of anyone else who has come across this and what speeds they have achieved.

We have also noticed that it is just possible to squeeze between a car and a signboard when overtaking on the outside on a bend but we have also come across a slight bug in the program in that if you go onto the grass around the inside of bend 3, the front end of a 'mystery car' shoots in at the bottom right of the screen for about 1½ seconds.

This superb game has given us hours and hours of interest and excitement. If you have not already bought it, do so!

Marc Duffield
and Christopher Barlow,
Huddersfield

SPINNER MODS

Dear Les,

I am just getting into Adventures and found issue 10 excellent. I also like the new listing format, MUCH easier to read.

Readers who do not have paddles might be interested in the following modification to SPINNER:

```
400 POKE 705,A:POKE 706,B:POKE 707,C:A
=PEEK(706):B=PEEK(707):C=PEEK(705)
401 FOR D=0 TO SP
402 IF PEEK(53279)=3 THEN SP=SP-1
403 IF PEEK(53279)=5 THEN SP=SP+1
404 IF SP<0 THEN SP=0
405 IF SP>20 THEN SP=20
406 NEXT D:POKE 77,0
407 IF PEEK(53279)=6 THEN F=F+2:B=0:C=
0:POKE 708,F:IF F>252 THEN F=0
410 IF PEEK(53279)=6 THEN F=F+2:A=F:B=
0:C=0:POKE 708,F:IF F>252 THEN F=0
420 GOTO 400
```

This enables you to change the speed by using the OPTION and SELECT keys.

Peter Boulter,
Twickenham.

More letters on page 8

48K Spectrum & Atari 400/600/800



Blue Thunder

by Richard Wilcox

After skilfully piloting your Jetcopter through a bombardment of Electronic Storms, Ground & Sea Based Missiles and attack from Armoured Barrage Balloons, you thought you were safe to complete your mission ... But No! ... yet another wave of deadly Jet Fighters appear from nowhere with only one objective...to eliminate you!

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PROBLEMS

Dear Les,

I recently had two problems with my 800 which other readers may experience and if they are handy with a soldering iron and a screwdriver they can easily save themselves a lot of money on repairs.

The first fault was an intermittent loss of power which came back on a random basis when you fiddled with the cables, the on/off switch and the lid. The problem was a faulty micro-switch on the lid which is easily accessed by removing the top of the computer. The switch is a push fit plus three solder joints. It cost me £26 to have this repaired at a Service Centre but a microswitch costs only 92p!

The second fault was a computer lock-up, again on a random basis, followed by the screen going bright yellow or dark red. The only way to regain control was to push the BASIC cartridge in and then gently withdraw it as turning the computer off and on had no effect. The problem was a loose chip. All you have to do is to unscrew about 14 screws and pull two connectors, lightly push all the IC's into their sockets and then put the computer back together again. Just remember which order you took it apart!

Obviously do-it-yourself repairs are not recommended if the unit is still under warranty but why pay someone else to just push a few chips back into their sockets!

John Dimmer,
Elgin, Scotland

MORE PROBLEMS

Dear Les,

I recently had a problem on my 400 which may have occurred on other users machines and the solution, being very simple, may help others.

After I had typed in a program, I LISTed it okay but when I came to run it all sorts of nasty things happened so I LISTed it again to find that the listing had turned into a load of garbage with REM statements and lines which made no sense at all. I corrected the lines and re-ran it but the same thing happened. I took the machine to a Service Centre who kept it for a week and then told me that diagnostic tests revealed nothing wrong with the computer. I asked if it could be the BASIC cartridge so the engineer had a look. He pushed a small screwdriver into the bottom of the cartridge to enable the guard to be moved back to reveal the contacts which were absolutely filthy. The remedy was to use a good quality pencil eraser and rub gently along the contacts until they shone like new again. This cured the problem which has never occurred again.

B.Sutcliffe,
Leicester

°°800 owners should also do this on their Rampacks and OS board to cure any similar problems. Often just removing and reseating the boards or BASIC cartridge cures all sorts of strange problems.

410 MODIFICATIONS

Dear Les,

One of the weakest links in the Atari Computer System is the 410 cassette with its frequent inability to load boot tapes.

Various solutions have been proposed and the most definitive article appeared in ANTIC February 1984 Vol.2 No. 11 pages 76-77 which reiterated and developed a similar article in ANTIC April 1983. A supplementary reference may be found in the article "Top Ten" from ANTIC July 1983 Vol.2 No.4 pages 90-91.

In essence one must replace two resistors of 240 K ohm and 330 K ohm which have a tolerance of 10% or 5% with the same resistors of 1% tolerance. They are apparently available from Maplin Electronics - see page 326 of their 1984 Buyers Guide.

So far, so good - but then in "Tangle Angles" ANTIC April 1984 Vol.3 No.1 page 103 in Mr Ratcliff's letter headed "Look for Gold Rings", mention is made of replacing six resistors!

Can anyone clarify this? How many resistors require replacement and are they readily locatable on the printed circuit board?

Kevin Fleming,
73, Woodend Cres.,
Aberdeen, AB2 6YQ

°°I don't know the answer. Over to you more technical readers.

XL RESET

Dear Les,

Thanks for the 'Reset Routines' in issue 11 and in response to your appeal for an XL fix, here goes.

Replace all occurrences of the inverse $ and inverse lower case v in the machine code string with inverse 0 (zero) and inverse lower case r respectively. What you have done is to replace the illegal 'Put character' routine (EOUTCH) entry address with the new address used by the XL O.S. The EOUTCH address has been moved from $F6A4 to $F2B0.

Those readers who prefer to read in decimal DATA rather than risk typing in wierd looking strings should change the equivalents of the above hex addresses i.e. low byte address 164 becomes 176 and high byte address 246 becomes 242.

XL computers should now return to the protected program when System Reset is depressed.

John F. Foden,
Halesowen

We received a bumper crop of letters this issue! Many thanks to all who wrote. Keep your letters coming as other readers like to hear of your Atari experiences. We also received a very interesting letter from Alan Sharples on the question of copying utilities and hope to publish this and a reply next issue. ●

Listing Conventions

The program listings in PAGE 6 are prepared so that the listings match exactly what you see on a normal 38 column screen. Inverse video and CONTROL characters appear as they do on the screen.

To obtain CTRL characters use the key shown in the following chart.

```
CTRL ,
CTRL A
CTRL B
CTRL C
CTRL D
CTRL E
CTRL F
CTRL G
CTRL H
CTRL I
CTRL J
CTRL K
CTRL L
CTRL M
CTRL N
CTRL O
CTRL P
CTRL Q
CTRL R
CTRL S
CTRL T
CTRL U
CTRL V
CTRL W
CTRL X
CTRL Y
CTRL Z
CTRL .
CTRL ;
SHIFT =

ESC ESC
ESC CTRL -
ESC CTRL =
ESC CTRL +
ESC CTRL *
ESC SHIFT CLEAR
ESC DELETE
ESC TAB
ESC SHIFT DELETE
ESC SHIFT INSERT
ESC CTRL TAB
ESC SHIFT TAB
ESC CTRL 2
ESC CTRL DELETE
ESC CTRL INSERT
```

Make sure that you SAVE a copy of any listing before you attempt to RUN it.

NUTTY

by Andrew Starkie

Nutty is a good name for this game! Not only do you have to catch falling nuts but the game title - Squirrel on a Pogo Stick - has to be one of the nuttiest around!

The object is simply to move your squirrel right or left to catch falling nuts. You lose a life each time you allow a nut to fall to the floor.

Hopefully this little program will give you some ideas for writing your own simple games without getting into the complex programming areas. It's simple but it's still fun.

```
1 REM ********************************
2 REM *  SQUIRREL ON A POGO STICK.   *
3 REM *  by Andrew Starkie . 1984.   *
4 REM *  J.D.                        *
5 REM ********************************
6 REM
8 Q0=0:Q1=1:Q3=3:Q4=4:Q5=5:Q6=6:Q7=7:Q
9=9:Q10=10:Q11=11:Q13=8:Q18=18:Q31=31:
Q34=34:Q70=70:Q106=106:Q256=256
9 Q279=53279:Q500=500:Q559=559:Q756=75
6
10 GRAPHICS Q0:? "BLACKOUT COMING UP":
FOR A=Q0 TO Q500:NEXT A
11 POKE Q106,PEEK(Q106)-Q5:ST=(PEEK(Q1
06)+Q1)*Q256:POKE Q559,Q0:GOSUB 49:GRA
PHICS Q0:POKE Q559,Q34:POKE Q756,ST/Q2
56:XX=ST/Q256
12 ? "INITIALISING... %%%%%":? "
            $$$$⊟←";:GOSUB 51:FOR A=Q0 T
O 1000:NEXT A
15 GRAPHICS Q18:POKE Q756,ST/Q256
16 ? #Q6;"SQUIRREL ON A POGO":? #Q6;"
      STICK":? #Q6:? #Q6;"          BY":
? #Q6;"  ANDREW STARKIE"
17 FOR PS=0 TO Q18:POSITION PS,Q10:? #
6;"%":POSITION PS,Q11:? #6;"⊟":FOR A=0
 TO Q70:NEXT A:POSITION PS,Q11:? #Q6;"
⊞":FOR A=0 TO 70:NEXT A:POSITION PS,Q1
1:? #6;" "
18 POSITION PS,Q10:? #Q6;" ":NEXT PS
19 POSITION Q4,Q10:? #Q6;"PRESS start"
20 POKE Q279,Q0
21 IF PEEK(Q279)<>Q6 THEN 21
22 POSITION Q4,Q10:? #Q6;"   O.K.    "
:DIM POGO$(Q3):OPEN #Q1,Q4,Q0,"K:"
24 POSITION Q1,Q10:? #Q6;"DIFFICULTY (
1-3)"
25 GET #Q1,Q:Q=Q-48:IF Q<Q1 OR Q>Q3 TH
EN 25
26 LEV=Q
27 FOR A=Q0 TO Q500:NEXT A:NUTS=Q0:LI=
Q3:POGO$=" # "
28 GRAPHICS Q18:POKE Q756,XX:POSITION
Q0,Q0:? #Q6;"NUTS=";NUTS:FOR A=LI TO Q
1 STEP -Q1:POSITION 20-A,Q0:? #Q6;"%";
:NEXT A
29 POSITION Q0,Q11:? #Q6;"''''''''''''
''''''''''";:SQPOS=Q10:POKE Q559,Q34
30 POSITION SQPOS,Q9:? #Q6;"%":POSITIO
N SQPOS,Q10:? #Q6;"⊞"
31 NUTPOS=INT(RND(Q0)*Q18)+Q1:NUTDRP=Q
1
32 ST=PEEK(632):POSITION Q0,Q0:? #Q6;"
nuts ";NUTS
34 IF ST<>Q7 AND ST<>Q11 THEN FOR A=Q0
 TO Q10:NEXT A:GOTO 37
35 IF ST=Q7 AND SQPOS<Q18 THEN SQPOS=S
QPOS+Q1
36 IF ST=Q11 AND SQPOS>Q1 THEN SQPOS=S
QPOS-Q1
37 POSITION NUTPOS,NUTDRP:? #Q6;" ":PO
SITION NUTPOS,NUTDRP+Q1:? #Q6;"&":NUTD
RP=NUTDRP+0.2*LEV
38 POSITION SQPOS-Q1,Q9:? #Q6;" % ":PO
SITION SQPOS-Q1,Q10:? #Q6;" ⊞ ":IF RND
(Q0)>0.5 THEN POSITION SQPOS-Q1,Q10:?
#Q6;" ⊟ "
39 IF NUTDRP<Q7 THEN 32
40 IF NUTPOS=SQPOS THEN NUTS=NUTS+Q1:S
OUND Q0,50,Q10,Q10:FOR A=Q0 TO Q10:NEX
T A:SOUND Q0,Q0,Q0,Q0:POSITION SQPOS,Q
13:? #Q6;" ":POSITION SQPOS,Q7:? #Q6;"
 ":GOTO Q31
41 POSITION NUTPOS,Q13:? #Q6;" ":POSIT
ION NUTPOS,Q10:? #Q6;"&":SOUND Q0,255,
Q13,15:FOR A=Q0 TO 99:NEXT A:SOUND Q0,
Q0,Q0,Q0:POSITION NUTPOS,Q10:? #Q6;" "
:LI=LI-Q1
42 POSITION NUTPOS,Q7:? #Q6;" ":POSITI
ON 19-LI,Q0:? #Q6;" "
44 IF LI=Q0 THEN POSITION Q5,Q5:? #Q6;
"game over":POSITION Q4,Q7:? #Q6;"PRES
S START"
45 IF LI>Q0 THEN GOTO Q31
46 POKE Q279,Q0
47 IF PEEK(Q279)<>Q6 THEN 47
48 GOTO 27
49 FOR A=Q0 TO 1023:POKE A+ST,PEEK(573
44+A):NEXT A:RETURN
51 FOR A=24 TO 63:READ B:POKE ST+A,B:N
EXT A:RETURN
53 DATA 124,124,124,124,56,16,16,16,12
4,124,56,56,16,16,16,16,192,192,216,21
2,252,248,248,60,0,60,110,70,94,126
54 DATA 60,0,255,255,0,255,255,0,255,2
55
```

A view from JEFF MINTER

Reproduced, with permission, from the Llamasoft newsletter 'The Nature of the Beast'.

'We now have the conversion of Hover Bovver running on 32k and over ATARI machines. The character graphics and 'feel' of the game are virtually identical to the C64 version, but you haven't got a multicoloured neighbour due to limitations of PMG. Still, there are advantages, such as 4-channel sound instead of only 3., and some very colourful hi-score and intro screens thanks to Atari's unsurpassed colour generation. Everything is there, from the 'English Country Garden' theme to the sounds of dog barks and mower noise.

I must say that the more I see and work with Atari, the more I like it. The potential of the machine is enormous, and the colour effects knock out your eyeballs! At the moment Atari owners are a rare but dedicated breed, and there isn't a lot of good cheap software about. However, due to recent developments this may all change soon; Jack Tramiel has just taken over Atari, and also Atari have a new graphics chip, MARIE, which makes GTIA seem tame. Reports from the American press, where the new chip has been seen in the 7800 video game from Atari, say that the new chip is capable of generating unlimited (get that!!) sprites. With potential like that, if built into a low-cost 64k micro (which Tramiel is very likely to do, to compete directly with the C64) no sane game designer is going to be able to resist it! Imagine Revenge of the Mutant Camels done using, say, 80 sprites plus all of Atari's amazing colours. ATARI owners may be the obscure ones now, but in a years time maybe things will be different!'

Nice one, Jeff. The Obscure ones eh? Like it. We are just waiting for our new leader to Set The Controls....

COMPETITION WINNERS

A total of 13 entries were received for the competition based on the scrolling demo in issue 9. Not a lot but then it was a fairly difficult programming task and every entrant is to be congratulated for having a go.

Three entries vied for the main prize. RESCUE MISSION by Geoffrey Thompson was a great Scramble type game entirely in machine code. FLIGHT OF THE SWAN by Christopher Jephcott was a good original idea close to the concept of the original program but using completely redefined characters (love the swan!) and GRIBBIT by C.J.Mitchell was an excellent Frogger type game. As all the games were quite different from each other, picking a winner wasdifficult and in the end I decided to find another Touch Tablet (or Compiler) and award the prize to both Geoffrey Thompson and Christoper Jephcott. Rescue Mission gets the prize simply because it was the best game and Flight of the Swan, which kept close to the original, was the most original idea.

Highly commended were Gribbit which missed out only because the idea was not as original as Flight of The Swan and an untitled game from K.M.Casey which had a ballooning theme.

Other entries were received from Colin Faller, G.Anderson, Andrew Starkie, David Eaton, David Blease, K.Vaughan and Fred Key and, whilst some of the entries did not use scrolling(!), all were appreciated.

Finally two youngsters submitted entries, Simon Currigan aged 10 and Warren Barnes aged 13. Although they did not win the main prize they should be congratulated for their entries.

There were due to be five runners up but in fact items of software were sent to all the entrants as thanks for their efforts. Perhaps next time YOU will enter!

We will run another competition next year and perhaps the readers could suggest a theme for the competition. If you have a good idea for a programming competition please drop me a line.

Editor

Line Lister 3 by S. Cant

In the very first issue of PAGE 6 was one of the most popular little routines we have published (uncredited but actually written by Les Ellingham) and the routine was improved by Len Lawson in issue 5. Now comes the third and best version from S.Cant of Ranton, Staffs.

Once you have typed in the listing, save it by using LIST "C:" or LIST "D: LISTER" and then tag it onto the end of a program you have typed by using ENTER "C:" or ENTER "D: LISTER". Type GOTO 32700 and the first line of your program will come up for checking. Each subsequent line can be called up by hitting any key.

```
32700 A=PEEK(136)+256*PEEK(137)
32710 L=PEEK(A)+256*PEEK(A+1):IF L=327
00 THEN ? "↖THE END":END
32720 ? "↖":LIST L:A=A+PEEK(A+2):POKE
764,255
32730 IF PEEK(764)=255 THEN 32730
32740 GOTO 32710
```

If you have not used a Line Lister before do try it, you will find it invaluable for checking your typing. ●

Special Interest

ADVENTURE

4. BLADE OF BLACKPOOLE



by Garry Francis, Australia

If you've read the Adventure column in the last three issues, you would have noticed that a large part of each column was devoted to an informal history of Adventures. It was something that I've always wanted to do and I hope you found the subject as interesting as I did. Now that I've got it out of my system, let's take things easier for a while.

There is an absolutely huge number of Adventures available for the Atari. I am trying to cover a broad cross section of these to give you a feel for what's available. If you'd like me to feature a particular Adventure, then drop a line to the Editor and he'll pass it on to me. I have completed over 35 Adventures myself, so I have a good base to draw from. If you just need a hint, again drop a line to the Editor and he'll put it in CONTACT. If I can't give you any help, then maybe somebody else can.

I'd also like to know how you feel about the hints that I supply in each column. Is the coding system alright? Are the hints too easy? Too hard? Too many? Too few?

Anyway, enough chit chat. Let's get down to business.

Review: This issue, we'll take our first look at an illustrated Adventure. I've chosen Sirius' "Blade of Blackpoole" because it deserves more recognition than it has received so far.

Sirius is best known for their arcade games for the Apple. Several of the better ones such as "Bandits" and "Wayout" have been translated for the Atari, but "Blade of Blackpoole" was their first translation of an Adventure. It is an illustrated Adventure somewhat like the well known Sierra On-Line series, but of a much higher quality. The game was designed by Tim Wilson and runs on an Atari with 48k and an 810 disk drive. If you've got a drive other than an 810, try before you buy. The copy protection is such that it may not work on some non-810 disk drives.

The game comes on a double-sided disk. Side A is copy protected, but side B is not. When you first boot the game, you are given the option of making a backup copy of side B. Make sure you do! From that point on, you need the original disk only to boot the game. The backup of side B is used for everything else. I wish other manufacturers would adopt this policy as it has three big advantages. Firstly, it doesn't matter if your copy gets damaged, because you still have the original to make another backup. Secondly, the SAVE GAME routine is carried out directly to the backup disk. This saves all the dreaded disk swapping inherent in other disk-based Adventures. Thirdly, the manufacturer maintains sufficient copy protection to prevent the average user from illegally copying the program and giving it to friends. Bravo Sirius!

When you've completed the backup procedure, you can proceed with the game. Following the title screen, you are dumped into the first location. The top two thirds of the screen is devoted to high resolution pictures of your surroundings in ANTIC mode 14 ($E to you hex freaks) or GRAPHICS 7+ as it is often incorrectly referred to. The pictures are always drawn as though you are facing north. They are not as high in quality as (say) Datasoft's "The Sands of Egypt", but they are much better than the kindergarten-style of Sierra On-Line. I particularly liked the soft, pastel tones chosen for the colours. One thing you'll notice is that the pictures are drawn fast. Very fast! I'd like to see their fill algorithm!

At the bottom of the screen, eight lines are reserved for text. Unfortunately, this is always in upper case - probably due to its Apple origins. Overall, the only really bad point about the display is an occasional screen flicker.

The room descriptions are usually two or three sentences long, but I found that they never provide any useful clues. They just add atmosphere to the game. Upon subsequent visits to the room, only the first sentence of the description will be printed. You can opt for lengthy descriptions all the time by typing LONG or revert to the default by typing BRIEF.

Talking about input, "Blade of Blackpoole" has an excellent input routine. You can use multi-word input like TALK TO THE BARTENDER or MOVE THE ROCKS WITH THE STAFF THEN GO NORTH. Despite this, I tended to use the traditional two word input whenever possible. When you've finished typing your command and you press RETURN, a response comes up immediately! Now that's what I like to see! Another thing you'll notice about the input routine is the absence of the keyboard click. I missed this at first, but you soon get used to it.

On the negative side, the program is marred by the occasional bad spelling (or American spelling such as tunneled, center, etc.) and some really pathetic grammar and punctuation. Why do text-based programs like Adventures always fall down in this area?

The remainder of this review contains quite a few game playing strategies, so if that bothers you, don't read any further! The instructions tell you that the object of the game is to recover the magical sword "Myraglym" from a secret chamber beneath the lake at Blackpoole. You must then return it to the altar from which it was stolen. (There is actually a further requirement, but this will be explained to you within the game.) You begin at the edge of a small lake (this is NOT Blackpoole). Nearby, you will find a tavern where you can quench your thirst or buy goods essential to the completion of the game. You do not have enough gold pieces to buy everything available and you will not know which items are useful until much further into the game, so be prepared to restart if you buy the

wrong items. Experienced players beware. Your Adventurer's instinct may be misleading!

Inventory control is very important. You can only carry six items at a time and several of the items you find are useless, so carry only what you need. About halfway through the game, you will have to get to the top of a cliff. You will later find that you should have carried six specific items up the cliff in order to complete the game. If you find that you don't have the items, then there is no way to return to the bottom of the cliff. Therefore, always maintain a saved game prior to ascending the cliff. I'd also suggest that you save the game before exercising any magic unless you are familiar with the consequences.

The HELP or HINT command is very useful, although some hints are so obscure that you will not understand them until after you have solved the puzzle that they refer to. If you run into trouble, try everything you can think of. The game has a huge vocabulary and will quite often return a humorous response.

As you work your way through the game, you are awarded points for achieving certain tasks. Keep track of your score. The maximum is 500, but I could only get 480 points at the completion of the game. The last 20 points are some sort of bonus, but I couldn't figure out how to get it. Could somebody please help me?

In summary, "Blade of Blackpoole" does not have a very original theme, but it is very well implemented. Unlike some other fantasy Adventures, the objects and surroundings are very consistent to the story. There is very little violence, but a fair share of riddles and magic. It is easy to map, but hard to solve. I would put it in the intermediate category, although a couple of puzzles are extremely difficult.

Hints: If you come to a grinding halt, try HELP or HINT in each room. If that doesn't help, try the hints below. (Note that I haven't given any hints where they're available within the program.) If you're extremely desperate, a complete solution may be found in "A Shortcut Through Adventureland" by Jack Cassidy, Pete Katz, Richard Owen Lynn and Sergio Waisman (published by Datasoft, 20660 Nordhoff Street, Chatsworth, CA 91311-6152, U.S.A.).

Don't know what you're supposed to do?
59 9 21 56 36

Can't take any of the items from the small room next to the tavern?
35 44 36

Can't get out of the quicksand?
11 25 12 24 8 20 39 53 21 26 52

Can't catch the bees?
36 36 36 13 57 1 40 36

Can't get past the carnivorous plant?
7 46 61 36

Can't move the boat?
11 25 62 27 52

Can't carry the boat?
15 41 36 14 47 36

Can't find the source of the faint voice near the misshapen tree?
7 46 61 36

Can't find the Jewel of Selmarn?
32 9 66 5 16 64 36

Can't get closer to the eerie light emanating from the trees?
34 63 67

Can't get past the monster in the river?
68 3 43 48 68 3 14 36

Can't move the boulder?
17 68 22 45 36

Can't open the huge metallic door?
60 51 33 36

Still haven't found Myraglym?
59 51 49 21 51 2 18 36

Can't find the key?
30 51 19 55 46 51 2 18 36

Keep hitting your head when you take a dive?
28 54 46 50 61 36

Can't find a bow?
17 51 29 36

Can't find an arrow?
6 51 31 52

Lost all your belongings?
10 37 65 23 4 58 42 67

Can't get the last 20 points?
69 38 10 67

1	THAN	13	IS	25	DO	37	WARNED	49	PRAYER	61	IT
2	RIGHT	14	DRINK	26	COMMON	38	CAN	50	PROTECTS	62	GONDOLIER
3	STRONG	15	SAVE	27	USE	39	BUTTERFLY	51	THE	63	BOTHER
4	DABBLING	16	SOME	28	WEAR	40	WINE	52	?	64	LIGHT
5	SHED	17	TRY	29	MAZE	41	GAME	53	WAVE	65	YOU
6	REMEMBER	18	PLACE	30	RETURN	42	MAGIC	54	SOMETHING	66	SHOULD
7	TALK	19	SPELL	31	SCROLL	43	MONSTER	55	BOOK	67	!
8	BREASTSTROKE	20	AND	32	THIS	44	INVENTORY	56	TAVERN	68	A
9	HINT	21	IN	33	KEY	45	FREQUENCY	57	SWEETER	69	NEITHER
10	I	22	HIGH	34	DON'T	46	TO	58	WITH		
11	WHAT	23	ABOUT	35	TAKE	47	POTION	59	SAY		
12	BACKSTROKE	24	,	36	.	48	NEEDS	60	FIND		

□

RESCUE MISSION

by Geoffrey Thompson

This game, a winner of our scrolling competition, requires a minimum of 32k memory.

THE GAME

You are flying an unarmed helicopter carrying vital medical supplies through lengthy caverns in order to reach your agents who have been wounded behind enemy lines. The caverns are well protected with anti-aircraft batteries, space mines, rockets and lasers so the mission is dangerous and difficult and the caverns are lengthy. The only aid you have apart from your own skill is a radar scanner at the top of the screen to show your position in the cavern. The joystick controls the helicopter in any direction and you have three helicopters, each with a limited supply of fuel. The space bar will pause the game at any point.

TYPING IT IN

Cassette users can type in the main listing as it stands. **Make sure that you save a copy before you try to RUN it.** Type RUN and the program will check each line of data and tell you if you have any errors. If all is well, you will be asked if you are ready to run. A 'Y' will begin the game.

Disk users should type in the main listing but substitute the lines shown in Listing 2. It may be easier to type in the main listing first and then type Listing 2 at the end as the lines will automatically overlay those to be replaced. **Make sure that you save a copy of the program before you RUN it.** Before you type RUN, ensure that you have a formatted disk in drive 1. The program will check the data line by line and write a file to disk with the filename "D: RESCUE.DAT" and then ask you if you are ready to run. A 'Y' will begin the game. To RUN the program subsequently, type in Listing 3 and save with whatever filename you wish on the same disk as "D: RESCUE.DAT". You can then RUN the program by typing RUN "D: (your filename)".

```
15 OPEN #1,8,0,"D:RESCUE.DAT"
40 PUT #1,BYTE:TOTAL=TOTAL+BYTE:NEXT X
:READ CHK:IF TOTAL=CHK THEN POKE 53279
,0:GOTO 25
80 TRAP 100:CLOSE #1:IF Y$="Y" THEN OP
EN #1,4,0,"D:RESCUE.DAT"
85 IF Y$<>"Y" THEN END
90 GET #1,BYTE:POKE MEM,BYTE:MEM=MEM+1
95 GOTO 90
100 IF PEEK(195)=136 THEN A=USR(AD):EN
D
105 POKE 559,34:? "ERROR ";PEEK(195):E
ND
```

Listing 2

```
10 OPEN #1,4,0,"D:RESCUE.DAT"
20 POKE 850,7
30 POKE 852,0:POKE 853,81
40 POKE 856,255:POKE 857,255
50 X=USR(ADR("hhh*LVd"),16)
60 CLOSE #1:A=USR(20736)
```

Listing 3

```
0 REM ******************************
1 REM *      RESCUE MISSION        *
2 REM *                            *
3 REM *   by Geoffrey Thompson     *
4 REM *          for               *
5 REM *  PAGE 6 Magazine - England *
6 REM ******************************
8 POKE 710,0:? CHR$(125):? :? "  PLEAS
E WAIT, CHECKING DATA!":FOR DEL=0 TO 1
000:NEXT DEL:POKE 559,0
10 DATA 0,1,2,3,4,5,6,7,8,9,0,0,0,0,0,
0,0,10,11,12,13,14,15
20 DIM HEX$(91),Y$(1),HEX(22):FOR X=0
TO 22:READ N:HEX(X)=N:NEXT X:LINE=990:
AD=20736:MEM=AD:TRAP 60
25 TOTAL=0:LINE=LINE+10:? "    LINE:";L
INE:READ HEX$:IF LEN(HEX$)<>90 THEN 11
0
28 DATLIN=PEEK(183)+256*PEEK(184):IF D
ATLIN<>LINE THEN POKE 559,34:? "LINE "
;LINE;" MISSING!!!":END
30 FOR X=1 TO 89 STEP 2:D1=ASC(HEX$(X,
X))-48:D2=ASC(HEX$(X+1,X+1))-48:BYTE=H
EX(D1)*16+HEX(D2)
40 POKE MEM,BYTE:MEM=MEM+1:TOTAL=TOTAL
+BYTE:NEXT X:READ CHK:IF TOTAL=CHK THE
N POKE 53279,0:GOTO 25
50 GOTO 120
60 IF PEEK(195)<>6 THEN 130
70 POKE 559,34:? CHR$(125);CHR$(253);"
 WARNING, MAKE SURE PROGRAM IS SAVED!!
"
75 ? :? :? "  READY TO RUN(Y/N)";:INPU
T Y$
80 POKE 2,0:POKE 3,81:POKE 9,2:IF Y$="
Y" THEN A=USR(AD):END
90 END
110 POKE 559,34:? "NUMBER MISSING OR A
DDED!":END
120 POKE 559,34:? "BAD DATA!":END
130 POKE 559,34:? "ERROR ";PEEK(195):E
ND
```

```
1000 DATA 2065E4A05FA256A907205CE4A9A6
8D0002A9578D0102A9C08D0ED4A9CA8DC002A9
5E8D98598D00D0A99A8D9959,5404
1010 DATA A9688D07D4A93E8D2F02A9038D1D
D0A9028D6F02A9D68D3002A9598D3102A9E08D
F402208053A9148DB359A901,4844
1020 DATA 8DC059A9008DC6028D03D2AD1FD0
2901D00AAD1FD02901F0F94C7E51AD8402D0EA
4C7E51A910A2069D3D58E8E0,5331
1030 DATA 0AD0F8A9108D5758A9118DBC598D
5858A9028DBA59A90B8D50588D4F588D4E588D
C102A9008D3002A9588D3102,4724
1040 DATA A9F88DC3598DC659A9028DB859A9
038DBF59A9FC8DC859A9008DC9598DB959A950
8DB6598DB459208053A9008D,5938
1050 DATA C0598D04D485CB206352A9688DF4
02A9948DC60220AF52A99A8D9959A9BE8DB559
8D04D0A2CFA9019D006BE8E0,5882
1060 DATA D4D0F8A9048DB959A9008DC1598D
C7598DC5598DBD598D1ED08DC4598DB7598D9A
598D9C598DCD598DBE598DCA,6309
1070 DATA 59AA20BD5220FC55A9008DC4598D
C5598D1ED0A9248D01D2A9BE8D00D2A95E8D98
598D00D04C2D569D0E58E8E8,5523
1080 DATA E8E027D0F660EEBA59A9148DBD59
200A56A9AA8D01D28D00D220FC55A9708D00D2
20FC55A9008D01D28DC45920,5685
1090 DATA 805320A55520FC55CEC859CEB459
ADC65938E9058DC6594CDE51A200BDA1589D9F
59E8E014D0F560A200ADC159,6040
1100 DATA DDC258F006E8E00ED0F360BDB558
E8E8E89D9F59CABDA1589D9F5960CE9D59F001
60AD78028D9E5929001D003CE,6397
1110 DATA 9959AD9E592902D003EE9959AD9E
592908D008EE9859A9008D9C59AD9E592904D0
08CE9859A9048D9C59AD9859,5216
1120 DATA C99BD008CE9859A9018DC259AD98
59C92FD003EE9859AD9959C949D003EE9959A9
0F8D9D59AD9A59C904D005A9,5919
1130 DATA 008D9A59AC9A59B94959186D9C59
AAEE9A59A900186908CAD0FAA8A9088D9B59AE
9959B9D1589D006CE8C8CE9B,5827
1140 DATA 59D0F3AD98598D00D060A900AA9D
006B9D006C9D006D9D006E9D006FCAD0EE60AD
C159C941900 6ADCD59D05B60,5545
1150 DATA CECC59ADCC59F00160A9548DCC59
ADCD59D047EEBD59AD0AD28D1ED0C94A90F6C9
9BB0F2A8A9008DD1598CCE59,6673
1160 DATA A2A38E02D08ECF59A9088D9B59A2
408ED059BDD15899006EE8C8CE9B59AD9B59D0
F0ADD159D0C2A9018DCD5960,6412
1170 DATA ADCB59D015ADD159D008A9408DCA
594C1754ACCE59A9004C5154A9018DCB59ADD0
5918690888DD059AAC970900E,5395
1180 DATA A9008DCD598DCB59AD0AD28DCC59
ACCE59A9088D9B59BDD15899006EC8E8CE9B59
AD9B59D0F06099006EC8C008,6148
1190 DATA D0F84CB953ADC159C9A0B00160CE
D259F00160A9018DD259ADD359D036ADC159C9
CB900160A9018DD359EEBD59,6303
1200 DATA A9D88DD4598D01D0AD0AD2C94990
F9C968B0F5A88CD559A200BD4E599006DC8E8
E04AD0F460CED459ADD4598D,6753
1210 DATA 01D0C91E900160A9008DD359A900
AAACD5599006DE8C8E04AD0F760CEC359ADC3
59F00160CEB859F00160ADC6,6118
1220 DATA 598DC359A9028DB859CEB559ADB5
598D04D0C95EF00160A9008D01D28D01D08D02
D08D06D2EE9959A9108D9B59,5632
1230 DATA 205456CE9B59AD9B59D0F5A900A2
01205D53ADC559F0034C2D55ADC459F0D94C6E
52A9008D01D28D07D2208053,5275
1240 DATA A900ACCE59A2009006EC8E8E008
D0F78DC159205456A2408ED0598ECA59AC9959
A9088D9B59AED059BDD15899,5989
1250 DATA 006CE8C8CE9B59AD9B59D0F0A935
8D9B59CE9B59205456AD9B59D0F5205456ADD0
5918690888DD059C97890C5A9,6062
1260 DATA 008DC5598D1ED020D45520545620
54564CDE51ADBA598DBB59A9108D58588D5758
A01BCEBB59D00160B93D58C9,5110
1270 DATA 1AF009186901993D584CB355A910
993D58884CBB55CEBF5920FC558D4E588D4F58
8D5058ADBF59F00FACBF59A2,5119
1280 DATA 13A90B9D3D58CA88D0F96068684C
4151A9008D9B59205456CE9B59D0F860EEBD59
A209CEBD59D00160BD3D58C9,5599
1290 DATA 19F00869019D3D584C0D56A9109D
3D58CA4C155620DE5220965320545620CD5420
0A56ADC459F0034C6E52ADC5,4327
1300 DATA 59F0034C2D55ADBE59D0FB4C2D56
A200A003CAD0FD88D0FA60ADC059F015CEB359
D00DA9208DB359ADF3024902,5847
1310 DATA 8DF3024C62E4ADFC02C921D00DA9
FF8DFC02ADBE5949FF8DBE59ADBE59F0034C62
E4EEC202205C54ADB759D00F,6096
1320 DATA ADC159C991D008A90F8DBD598DB7
59AD06D02903F003EED159AD04D0290BF003EE
C559AD04D02904F003EEC459,5643
1330 DATA AD0CD02906F003EEC559ADCA59F0
0D4A4A8D03D2A9288D02D2CECA59ADC259F041
CECF59ADCF598D02D0CED459,6075
1340 DATA ADD4598D01D0A9008DC259C6CBA5
CB8D04D41084A90785CB8D04D4854DEE0E58AD
0E58A2009D0E58E8E8E8E027,5765
1350 DATA D0F6EEC159208D52AD0AD2CDC859
9029ADC75949CF8DC759ADC759A00099E45FC8
C009D0F8A00099E461C8C009,6512
1360 DATA D0F8A00099E463C8C009D0F8CEB4
59F0034CA357ADB6598DB459ADB9590AAAA900
9D7D5E9D7D5F9D8E659D8E66,6201
1370 DATA CEB959ADB959D005A9048DB959AD
B9590AAAA97D9D7D5E9D8E65A97C9D7D5F9D8E
664C62E4488A48A200BDC057,5810
1380 DATA 9D16D0E8E003D0F5AD0AD28D19D0
68AA68403478C6000000000000000000000000
000000000000000000000000,2878
1390 DATA 0000000000000000000000000000
00000000000000000000000000000000000000
00000000707070463D582086,721
1400 DATA 30479F593056005B56005C56005D
56005E56005F56006056006156006256006356
006456006556006656006746,2864
1410 DATA 655807300641005841424344458A
10111516100000000000000000000C8C5C9C5C8
8A1011000000000000000000,2134
1420 DATA 0000000C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0086,614
1430 DATA 8785882B2C6C6D6C6C6D6C6C6D6C
6C6D0000000000002E2F303132333435363738
39000000006E6F7071727374,3147
1440 DATA 757677777879000A1E32465A6E82
96AABED2DFE9FF001F044E3F1F0E00000E044E
3F1F0E000004044E3F1F0E00,3254
1450 DATA 000E044E3F1F0E00007C10397E7C
38000038 10397E7C3800001010397E7C380000
3810397E7C3800000008181C,2032
1460 DATA 0000000012205C380A2000104410
5A0D2204000410249908224804896008A10940
24C124004801800004200000,1785
1470 DATA 0000000000000001020304010307
3F7EFE7E3F0703010000000000000000000000
000000000000000000010307,675
1480 DATA 3F7EFE7E3F070301000000000000
00000000000000000000000000000103073F7E
FE7E3F070301005EA1010000,1553
1490 DATA 010F0000006E2F30313233343536
37373839000000001E475E5000020402001100
0000010000F80000F800FC00,1802
1500 DATA 0000680089A37800010054667070
7070707047F4597070007707070700670700670
70700270707041D659000000,3744
1510 DATA 7200650073006300750065000000
00000000000000006D0069007300730069006F
006E0000000022390027252F,1631
1520 DATA 26260034282F2D30332F2E000026
2F3200302127250016002D2127213A292E2500
000000000000000000000000,1098
1530 DATA 0000303225333300B3B4A1B2B400
00000000000000000000000000000000000000
000000000000000000000000,1115
1540 DATA 0000000000000000000000000000
00000000000000000000000000000000000000
000000000000000000000000,0
1550 DATA 0000000000000000000000000000
00000000000000000000000000000000000000
000000000000000000000000,0
1560 DATA 0000000000000000000000000000
00000000000000000000000000000000000000
000000000000000C0C000000,24
```

►►►

RESCUE MISSION continued

```
1570 DATA 000000000000000000000000000000
00000000000000000000000000000000000000
000000000000000000000000,0
1580 DATA 000000000000000000000000000000
00000000000000000000000000000000220C0C
0C0C0C0C0C0C0C0C0C0C0C0C,202
1590 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C,540
1600 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C00000000000000000000000000
000000000000000000000000,252
1610 DATA 000000000000000000000000000000
00000000000000000000000000000000000000
000000000000000C0C0C0C0C,60
1620 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C0C000000000000
000000000000000000000000,336
1630 DATA 000000000000000000000000000000
00000000000000000000000000000000000000
000000000000000000000000,0
1640 DATA 000000000000000000000000000000
000000220C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C,358
1650 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C,540
1660 DATA 0C0C0C0C0C0C000000000000000000
00000000000000000000000000000000000000
000000000000000000000000,84
1670 DATA 000000000000000000000000000000
000000000000000000000000000C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C,228
1680 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
00000000000000000000000000000000000000
000000000000000000000000,168
1690 DATA 000000000000000000000000000000
00000000000000000000000000000000000000
000000000000000000000000,0
1700 DATA 000000000D00220C0C0C0C0C0C0C0C
0C0C0C230D222300000D220C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C,571
1710 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C00000000000000000000,420
1720 DATA 000000000000000000000000000000
00000000000000000000000000000000000000
000000000000000000000000,0
1730 DATA 0000000000000000000000000000C0C
0000000000000000000000000000000000C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C,216
1740 DATA 000000000000000000000000000000
00000000000000000000000000000000000000
000000000000000000000000,0
1750 DATA 000000000000000000000000000000
00000000000000000000000000000000000000
0000000000220C0C0C0C0C0C,106
1760 DATA 0C2300000000000000000000220C0C
0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
23000000000000007D000022,527
1770 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C000C0C00000000000000000000
000000000000000000000000,276
1780 DATA 000000000000000000000000000000
00000000000000000000000000000000000000
000000000000000000000C0C,24
1790 DATA 000000000000000000000000000000
AA0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0000
000000000000000000000000,362
1800 DATA 000000000000000000000000000000
00000000000000000000000000000000000000
000000000000000000000000,0
1810 DATA 000000000000000000000000000000
00000000000000000000000D292827230D0000
0000000000001B1A0000220C,280
1820 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
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0C0C0C0C0C0C0C0C0C0C0C0C,565
1830 DATA 0C0C0C0C2300000C0C000000000000
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0000000000000000007B0C0C,305
1850 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
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1860 DATA 000000000000000000000000000000
00000000000000000000000000000000000000
000000000000000000000000,0
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000000000000000000000000,0
1900 DATA 000000000000000000000000000000
000C0C00000000000000000000000C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C,228
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000000000000000000001B0C1A000000000000
000000000000000000000000,139
1920 DATA 000000000000000000000000000000
0000000000000000000000000000000000001B
0C1A00001B0C1C1D1E00001B,218
1930 DATA 1A00000000001B0C0C0C0C0C0C0C0C
1A00000000220C0C0C0C230D00220C0C0C
2300001B0C0C0C0C0C0C0C0C,533
1940 DATA 0C0C00000C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C00000C0C0C0C0C0C000000000000
000000000000000000000000,276
1950 DATA 000000000000000000000000000000
00000000000000000000000000000000000000
000000000000000000000000,0
1960 DATA 000C0C7A000000000000000000007B
0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C1A0000000000000000,559
1970 DATA 0000000000000000001B0C0C0C0C1A
00000000000000000000000000000000000000
000000000000000000000000,113
1980 DATA 4E0000000000000000000000000000
0021201F0C0C1A1B0C0C0C0C001B0C1A
000000001B0C0C0C0C0C0C,511
1990 DATA 0C0C0C1A00220C2425260000000000
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00000C0C0C0C0C0C0C0C0C0C,591
2000 DATA 0C0C0C00000C0C0C0C0C0C00
00000000000000000000000000000000000000
000000000000000000000000,132
2010 DATA 000000000000000000000000000000
0000000000000000000000000000000000000C
0C0000000000000000000000,24
2020 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C1A0000000000000000000000
0000004E1B0C0C0C0C0C0C,491
2030 DATA 1C1D1E000000000000000000000000
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0C0C00000C0C0C0C0C0C00,423
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00000000000000000000000000000000000000
000000000000000000000000,0
2070 DATA 000000000000000000000000000000
000000000C0C7A0000000000000000007B0C0C
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2080 DATA 0C0C0C0C0C0C0C1A00000000000000
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0C1A004E0000000000000000,421
2090 DATA 000000000000004E00000000001B0C
0C0C0C0C1C1D1E00000000000000001B0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C,483
2100 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
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1B0C0C0C0C0C0C0C0C0C0C0C,619
2110 DATA 0C0C0C0C00000C0C0C0C0C0C0C0C0C
0C0C0C0C0C2300000C0C0C0C0C0C0C00000000
000000000000000000000000,335
2120 DATA 000000000000000000000000000000
00000000000000000000000000000000000000
000000000000000000000000,0
2130 DATA 000000000C0C000000000000000000
0000000C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C00000000,324
```

continued on page 44

CONTACT

GHOST TOWN: How do you get past the snake on Boot Hill? Please help. Paul Steele 0782 279088 after 6pm.

B.C's QUEST FOR TYRES: I know how to get past the first water ditch by taking a lift off the bird but how do I get past the second? Please help. Paul Steele (as above).

PEN PAL/SWAPS: I would like to get in touch with another PAGE 6 reader so we could become pen pals and swap adventure hints etc. I own an Atari 400 and disk drive. Bobby Earl, 37 Northwood Road, Prenton, Birkenhead, Merseyside, L43 0SR

CANTARI USER GROUP: Canterbury and District Atari Computer Club has recently started and we would like more members. Meetings once a month at a local hall to exchange home-written programs, ideas and info. Further information from S. Fawcett, 6 Wife of Bath Hill, Canterbury, Kent, CT2 8PG

EXCHANGE: Atari 'Video Easel' cartridge and Acetronic MPU 2000 games computer with 4 cartridges. All very good condition. Will swap for anything Atari. Please contact Eddie Cousins, 10 Tower Street, Golspie, Sutherland, Scotland, KW10 6SB

THE HULK: I cannot pull the ring in the first dome. Can you help? Also has anyone got an Editor/ Assembler to sell? P. Fragapane, 18 Parson Street, Bedminster, Bristol, BS3 5PT. Tel. 0272 663475 (after 6pm.)

COLOSSAL ADVENTURE: Could anyone tell me how how to get the platinum pyramid out of the 'plover room' through the crack.? David Rutter, 30 Birchgate, Bucknall, Stoke-on-Trent, ST2 8JT. Tel. 0782 281599 (after 4pm.)

DATASOFT COMPILER: Can anybody tell me how to convert my Datasoft Compiler to read and write DOS 3 files? Is it posssible? A.R.Truelove, 38 Warren Crescent, Calne, Wilts, SN11 9BL

PAGE 6 BACK ISSUES: Issues 1 & 2 required to complete my collection. Martin Moran, 14, Leenan Gardens, Derry City, N. Ireland.

SAVAGE ISLAND II: I have found two rooms apart from the cramped metal area using the loop and I have moved the lever to the gym. Where do I go from here? Anthony Hughes, Twin Oaks, Oak Farm Lane, Fairseat, Sevenoaks, Kent, TN15 7JU

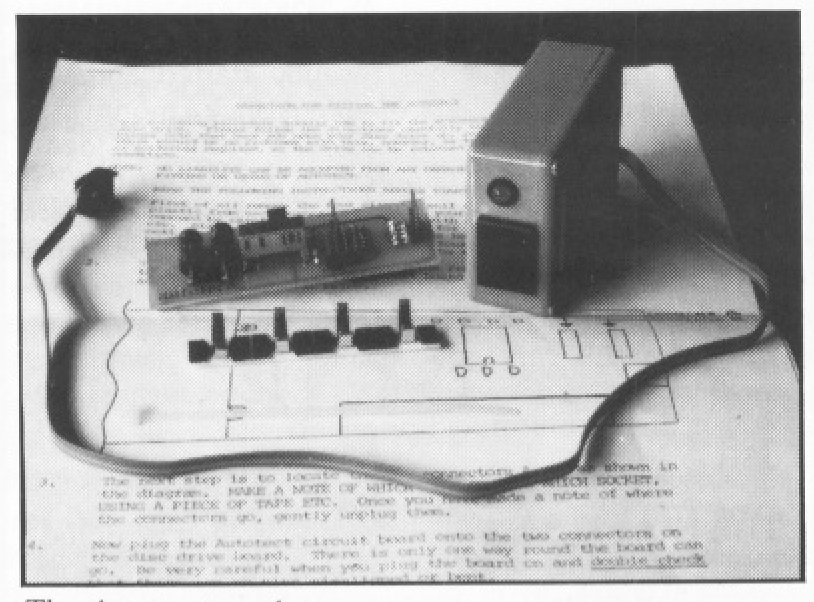
ENCHANTER: Can anyone tell me how to overcome Krill? I have found my way to him in his secret room but my spells are useless against him! David Blease, 31, Melcombe Ave, Weymouth, Dorset, DT4 7TF. Tel. 0305 771230

Review

Autotect .... an 810 drive modification

Reviewed by Les Ellingham

Some owners of the 810 Disk Drive may not know that you can use the reverse side of a single-sided disk simply by cutting a notch on the side of the disk opposite to the existing notch. It is quite easy to do but it is fiddly and can be dangerous, especially if, like me, you use a scalpel! In the States a 'Nibble-Notch' is available but costs around $19 for overseas shipment which is a bit expensive for a ticket collectors punch! An alternative, which does much more than just allow you to write to the reverse of a disk, is the Autotect Disk Modification from Magical Electronic Services.



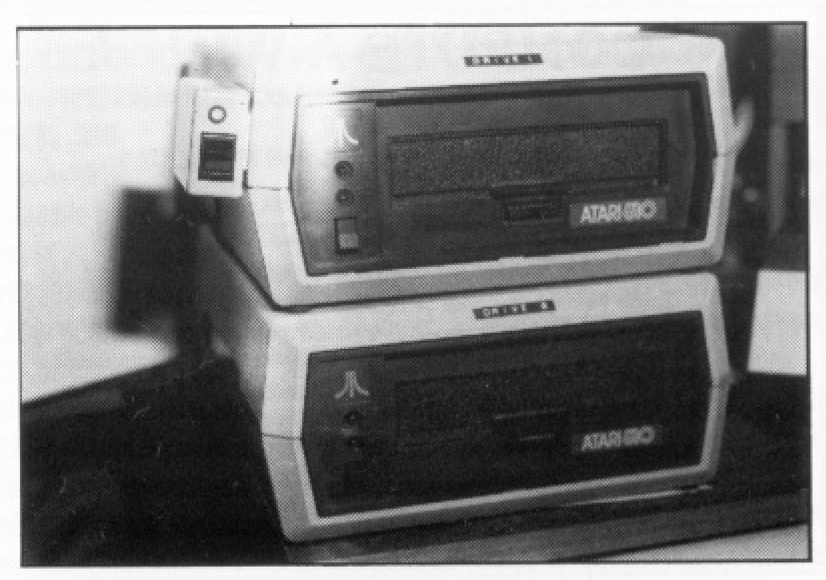
The Autotect package.

The Autotect consists of a plug in circuit board, a switch box with LED, a few cable ties and a four page set of instructions for fitting and use. As well as being able to write to the reverse of a disk without cutting a notch, you can, depending on how you connect the board, have automatic write-protect without using write-protect labels and there is also a switch that enables the drive to be quietened down. One of the fears about using a device which ignores write-protect labels is that you may inadvertently delete a wanted file but the Autotect overcomes this problem by having a constantly flashing red LED when write-protect is off. You can still write over a file but your eyesight would have to be pretty poor not to notice that LED!

Two configurations are possible depending on how you connect the board. Firstly, with the LED on red you can write to any disk with or without a notch or write-protect label and, with the LED on green, all disks are write-protected. The alternative is to have the drive act as normal, i.e. as if it had not been modified, when the LED is green and have the write enable facility on all disks when the LED is flashing red. I prefer the latter as I find it easier to stick a write protect notch on those disks I know I want to protect but occasionally I want to add something to those disks and I can then simply flick the switch and add the file or write onto the other side of the disk. Either way, the choice is yours and the instructions are quite explicit on the correct way to connect up the Autotect for each operation.

The board has a switch which can be set to one of three positions to quieten down the noise of the drive when the drive head moves across tracks. Three positions are given as the drive may not function correctly with this facility. It certainly does quieten the drive but I found that even in the 'less quiet' position my drive just kept on spinning forever. It may work on other drives but I don't really consider this feature to be particularly important anyway and I have just left mine in the 'off' position.

The switch box and LED fits on to the outside of the drive and looks very neat, being the same colour as the drive and slightly larger than a matchbox. Having a look inside the box reveals a simple rocker switch and LED and, if you don't mind drilling a few holes, these could easily be removed and fitted to the front panel of the drive with the switch where the Atari logo is and the LED beside the busy light. The unit nevertheless looks good stuck on the outside, much better in fact than you might think.



Fitted and looking quite neat.

The instructions are quite clear except on one point and fitting the unit is relatively easy with no experience or tools required other than a screwdriver to remove the drive lid. The exception referred to is in fitting the connector from the switch where the instructions say that 'the black side of the plug should be facing up'. In fact mine had no black side and a piece of intelligent guesswork was required.

I have now been using the Autotect for several weeks and quite simply would not want to be without it. Definitely one of the best additions to my system and highly recommended. ●

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Y1D

INDUS GT *disk drive ... a World Champion?*

Reviewed by Colin Boswell

Same old problem, every time you write a large program you have to wait 15 minutes to save it on cassette. So what do you do? Save up your pennies for a disk drive. Until now British users could only look with envy at the choice of four independently made drives for the Atari available to users in the States but now Hi-Tech Distribution Ltd, based in Birmingham, are importing the INDUS GT disk drive made by Indus Systems of California and very nice it is too!

The first impression is one of amazement at the packaging. No huge grey cardboard boxes here, the GT comes packed in a shrink-wrapped plastic briefcase type box inside which is a set of dividers allowing you to use it as a disk-box. Also inside are four disks, five manuals and a large wad of grey foam, again shrink-wrapped. After removing this layer of foam and plastic, you get to the disk drive, in the now familiar wrapping. The drive itself is finished in matt black with a smoked plastic door covering the drive entrance. It is around half the height of an 810, two thirds the width and the same length. The overall impression is of a very well made piece of equipment.

On the back of the drive are two serial port connectors, the power socket and switch and a four-way dip switch. This switch is used to configure the drive, the first two switches being used to set the disk drive number, the third allowing you to set the density on power up, with the final one unused at the moment. On the front of the disk drive is the catch for the door, which once opened gives access to the disk and the control panel. This panel contains a numeric display to the left, three indicators in the middle and four switches on the right. The display is put to several uses, one of which is to show the current sector being accessed. It can also show an error code, if an error such as a bad sector occurs, as well as the drive number and density. The first two indicators light when the disk is powered up and when it is busy, the third light is the protect indicator and lights whenever a disk with a write protect tag is in use. In addition, if a disk is inserted without a write protect tag you may write protect it by pushing the button marked 'Protect'.

The other three buttons change the display mode. Pressing the button marked 'Track' will clear the display back to the current track after an error or after pressing one of the other buttons. The button marked 'Drive type' is used to display both the drive number and the density in use. The GT will work in 810/1050 single density mode, 1050 dual density mode or full double density mode, allowing you to store approximately 90k, 130k and 180k respectively on a single sided disk. The mode you are using may be changed in one of three ways. You may set the density entered on power up by changing the switch on the back of the drive or you can use the front panel switches by pressing the 'Drive type' and 'Track' buttons together and finally you can change the density from software, although the manual discourages changing modes without rebooting as few Disk Operating Systems can handle it. There is one more button marked 'Error' and it is used to display or clear the last error encountered. Error messages are displayed in the form of a letter showing the type of operation together with a number showing the type of error.

After obtaining permission from the importers, I opened up the review drive to inspect its innards. Inside it is clean and neat, with well constructed boards and all wires grouped together with cable ties. There are two boards and on the side of the main board are two expansion connectors which will be used to provide unspecified add-ons at a later date. The mechanism itself is very quiet in operation, barely rising above a quiet hum when accessing the disk. All connectors are of good quality and the serial lead supplied is a massive five feet long so there is no danger of pulling the GT off its perch. The power supply is manufactured specially in this country and is around the same size as the 810 power supply although there is some twenty volts difference! One problem that may occur if you own two or more drives, is that the plastic dust door on the GT may jam or be trapped shut if stacked and therefore the GT must be on top of any 810 or 1050 and two or more GT's may be a problem to stack.

Unlike the 1050 which only comes with a single disk containing DOS 3, the Indus comes with a package of four disks and five manuals, one of which is the drive operating manual. The Disk Operating System (DOS) supplied is DOS XL written by Optimized Systems Software (OSS), who produce such programs as BASIC XL and ACTION!, so it has a fine pedigree. Although, as supplied, DOS XL does contain an Atari type menu, I tend to use it in command line mode which is virtually identical to CP/M type systems, down to the use of the COM extension for machine code files. (Imagine being able to go from BASIC to DOS, type DIR for a directory listing, and back to BASIC without waiting for any DUP.SYS files to load!) Configuring DOS XL to work with both single and double density drives at the same time is relatively easy, enabling you to use a number of different drives at once. Unfortunately, the manual supplied with the GT version of DOS XL is no match for the original written by OSS so I recommend that anybody who buys the Indus GT should try and get hold of a copy of the OSS manual. The only problem with DOS XL is that it does not

support 'dual density' mode, although with double density available, I do not see the need.

In addition to DOS XL, the GT is provided with three software packages. The first is called the 'Estate Word Processor' and, as its name suggests, it is a simple text editor. On loading 'Estate' you are presented with a title page. Pressing any key takes you to the main menu which is split into three sections. The top line displays various numbers relating to the text size and also shows any error messages. The bottom line is the command line and is used to execute special instructions such as load and save text and the rest of the screen is the blank 'paper' on which you will write your document. When typing in text, the software will automatically scroll the text if you go over twenty characters. This is better than other editors such as Atariwriter, which actually wrap the text on the screen and change it to fit in the margins at Print time, since it gives a better idea of what is on the screen.

In use, the word processor is relatively simple to get to grips with and provides a useful way of handling your daily correspondence. Since the maximum line length is 255 characters, a number of other possibilities exist such as the production of tables or forms. Although some of the commands are a little obscure and the error messages terse, the manual is quite useful and comes with a handy reference card. If this were available 'off the shelf' it would certainly give some other systems a run for their money!

The second package is called 'Data Manager' which is, not surprisingly, a small database. Although limited in scope, it provides a good introduction to database technology and could probably be used to catalogue stamps or recipes and the like.

The final package has a jokey title 'Albert E. Spreadsheet' and is a jokey program. Supposedly a spreadsheet, it is written in BASIC and is consequently slow. This could be forgiven if it were not so cumbersome to use. There is a slip of paper supplied with the manual saying that the program has been copy protected against piracy so I suppose someone must consider it of some value!

In conclusion, the Indus GT is a very nice piece of equipment and Hi-Tech are to be congratulated for importing it. During the review period it has never given any problems and it stood up to some quite rigorous testing. With one exception, the software supplied with the drive is of good quality and, in my view, the DOS supplied is the best available. The only question mark arises over the price. At nearly £400, the Indus is a hefty investment although the software included does make it better value for money. I would certainly have one, if someone would lend me four hundred pounds!

THE HARD(WARE) FACTS

AN ALTERNATIVE LIGHT PEN

I believe it was Marconi who said that invention is 1% inspiration and 99% perspiration. To relieve some of the h ard work in trying to get a recognisable graphics image on the screen, I needed some inspiration for something that would be better than POKEs and DRAWTOs.

What about a light pen? There are, after all, locations for it (54284 and 54285) but I could not find one for the Atari, although rumour has it that the one for the Apple might work. I could of course have built my own light pen but then suddenly graphics tablets came along. Could this be the answer? Not at £90 at time, at least not for me. I put on my thinking cap and came up with the 1% inspiration for a minimum cost device in the hope that someone could write the software and make it work with the Atari. Although this particular version is untried, I did make a working bar-decoder some six or seven years ago but there was little interest at the time. Anyway this simplified version should enable you to produce pictures on a screen.

This is no ordinary light pen. Light pens react to the presence or absence of light from a particular area of a CRT screen when drawing across the screen with the pen. This idea is to place a drawing flat on a table and use the special pen which has its own light source to manually scan across the page line by line to detect light and dark areas of the image. This will produce an equivalent electrical output along the wire to the computer and the signal would be interpreted by software to produce an exact reproduction on the CRT screen. The idea is shown in a simplified form but if you have the time and a Meccano set or something similar, you could perhaps produce a rotating drum around which the picture is fitted. The drum would be fitted on to a threaded rod and driven at constant speed! The pen would be fixed in position vertically and moved horizontally to scan a different part of the picture as the drum rotates. The result would be the same as scanning by hand but would possibly be more accurate and faster.

Due to limited space, I will only describe the 'pen-reader'. The circuit diagram is quite simple and the only tricky bit is getting the spacing right from the paper to the lens. (Figure 1).

The preset pot used for sensitivity adjustments is the type with a screwdriver slot and is best set to midway and then adjusted after construction so that it reacts properly during the transition from black to white. A PEEK at locations 54284 and 54285 would give the necessary reading. There is obviously software needed for this but this should present no problems to PAGE 6 readers!

The light sensitive transistor has three connections but the base (centre) connection is not used. Looking at the flat side with pins pointing down the E (Emitter) is on the left, B (Base) in the centre and C (Collector) on the right. The light sensitive part is that circular lens type part and must be fitted so that the light reflected off the page, as seen through the hole in the box, passes through the 8mm lens and falls on this spot on the transistor. I would again emphasise that this particular version is untried and it is probable that some hardware experts among the readership will be inspired by this article to come up with a

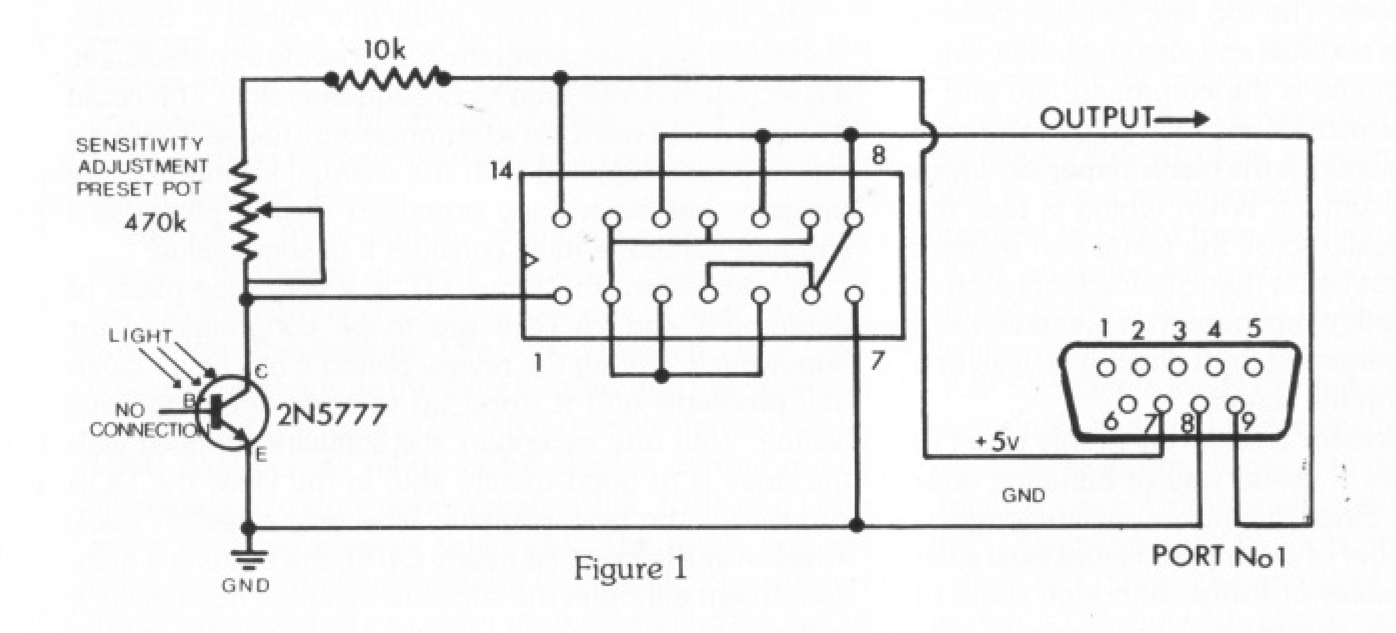
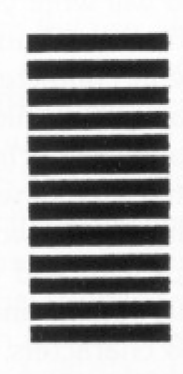


Figure 1

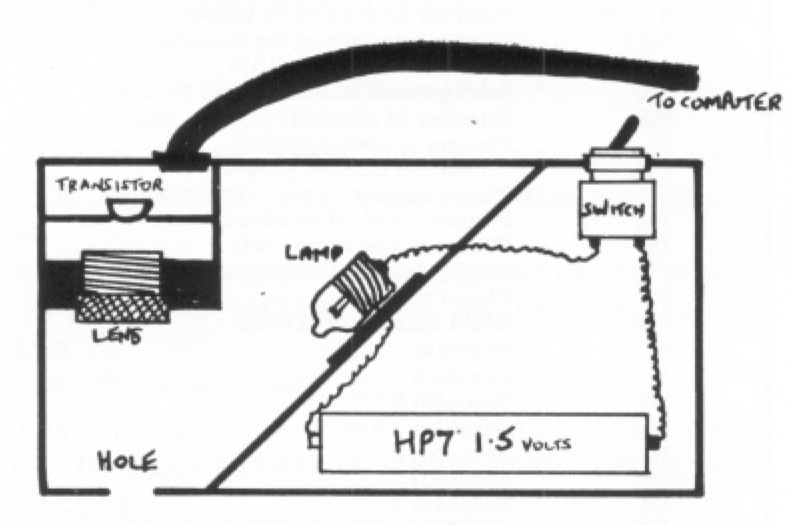

Figure 2

by John J. Smith

better solution. If you do, please let me know. I want to try out *your* ideas!

The 'pen' used to read a drawing is not really a pen at all but instead consists of a small box or other suitable container approx. 4" x 2" x 1". It sounds a little large but remember that it has to contain all the parts. These are as follows.

Light sensitive transistor 2N5777
Lens - 8mm cine movie projector type.
Lamp - 1.5 volt or 1.1 volt torch bulb with lens cap on one end.
Battery - 1.5 volt cell type HP7
Potentiometer - 470K preset pot.
Intergrated circuit - 74C04



The inside of the box should be painted matt black to prevent reflections. The hole in the bottom of the box should be approximately ½" from one end and the size of the hole approximately ⅛". Size of the hole equals definition to sensitivity and should be adjusted by experiment.

The lens has a threaded portion on the outside allowing a certain amount of zooming enabling adjustment to be made. This adjustment is critical and is best explained by using figure 2. When the lens is the correct distance from the page the black line will fill the whole lens as magnification is quite powerful on this type of lens. Moving it across the stripes will appear to make the lens alternate from dark to light. The distance from the page should be measured and the transistor mounted behind the lens at equivalent distance in its own light proof box looking down at the hole through which the page is read. Make sure that the lamp is slightly behind and to one side of the lens and positioned so that it is aimed at the hole. A tall piece of plastic or PCB will help.

There it is then, an idea for a cheap graphics device. There you have the inspiration, can you provide the perspiration and make it work?

Games

GANGSTERS

by Graham Askew

Gangsters is an arcade type game for 1 or 2 players. Each player starts with three men and an extra man is awarded for a score reaching 2500. There are 9 levels of increasing difficulty to choose from initially with each level successfully completed leading automatically to the next until the highest level is reached.

Player 1 controls a blue gangster and Player 2 a green gangster and play commences at the top left floor of the building. Remaining men are shown above the building in the centre with scores at either side indicated by an arrow. The level(s) being currently played or reached are shown below the building at either side with the time in the middle. The object is to reach the exit door at the bottom right of the building after searching for and collecting bottles of bootleg. The whole floor of the building must be covered within the time limit and 50 points are scored for each bottle collected. Bonus points are awarded for any time left depending on the level.

To hamper your progress a rival gang are sending their own men in at the bottom exit to stop you taking the liquor. If one of them comes across a bottle he collects it and prevents you from colouring the floor and collecting any more bottles yourself. In addition if, whilst in this temporary state, an enemy gangster runs over any floor area you have already searched, he will turn it back to its original colour. It is essential that you track him down and shoot him with your machine gun by pressing the joystick fire button, thus gaining an additional 50 points and being able to carry on with your search. If you kill an enemy, another will immediately come looking for you. Remember, they are not stupid and, since they carry a machine gun as well, they will shoot at you as soon as they come within range.

Some additional features: You lose a man either by being shot or by running out of time. With each level the enemy action is faster, there are more bottles to be picked up, and the enemy gangsters will chase you more precisely and relentlessly. There can be some nasty shoot outs between you and any intervening bottles! You can shoot bottles out of the way but there is no score for spilt liquor! A high score is incorporated and, at the end of the game, options appear set at the previously selected figures.

The game features a very colourful main screen (10 colours) obtained by prolific use of Display List Interrupts initialised in machine code. It is essential to type in the title page in inverse video where shown in order to get the DLI cycling of colours there.

Background sound during the game is achieved by means of more machine code operating as a Vertical Blank Interrupt routine and great care should be taken in ensuring that the program is correctly typed in order to avoid crashing the system. The safest course of action is to SAVE the program before running it.

MAIN VARIABLES

B	50 points character
BO	Bottle shape
CL	Clear floor check
DL	Beginning of display list
E	Door exit screen display
EL	Floor colouring determinant
G	Enemy gangster screen position
GB	Character behind enemy gangster
GC	Enemy gangster climbing
GD	Enemy gangster vertical position
GK	Enemy gangster killed?
GL	Enemy gangster facing left
GR	Enemy gangster facing right
GS	Enemy gangster's shape
HI	High score
I1	Low memory DLI pointer
I2	High memory DLI pointer
IE	Interrupt request enable location
L(	Level for each player
L	Ladder shape section
LE	Level
LM	Left margin of screen
4ctbM(	Number of men each player
ML$	Machine language for transfer of character set to RAM
MV	Background music/sound volume
NP	Number of players
P	Players screen position
PB	Character behind player
PC	Player colour
PD	Players vertical position
PL	Player shape facing left
PR	Player shape facing right
PS	Player's shape
RM	Right margin of screen
S(	Score(s)
S	Joystick
S0	Setcolor 0
S1	Setcolor 1
S2	Setcolor 2
S3	Setcolor 3
S4	Setcolor 4
SC	ANTIC enable/disable
T	Time
V0	Voice 0 distortion location
W	First screen display location
WA	Wall shape
X	Move of player
XT(	Extra player
Y	Move of enemy gangster

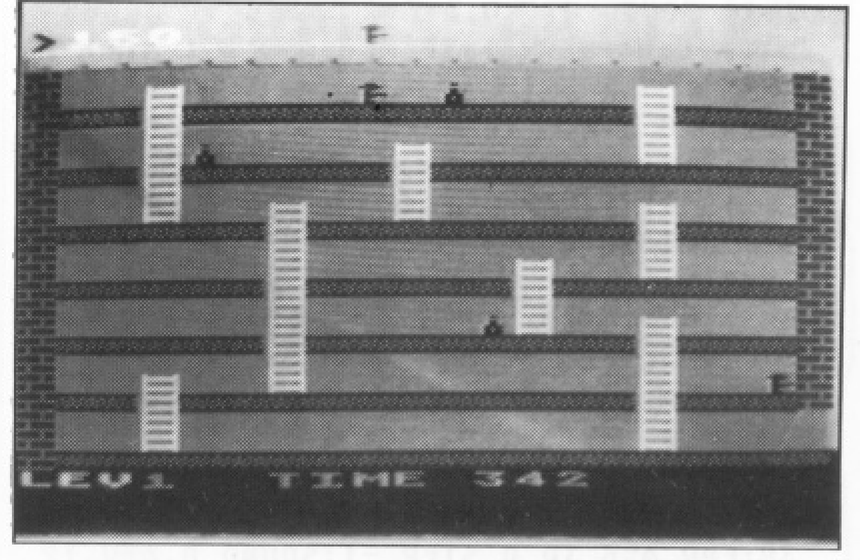
There are many variables in the program, thus allowing it to fit in 16K. It should be noted that O=0 and that this alone saves approximately 900 bytes of memory! The program will probably still work in 16K if the occasional 0 (zero) is typed instead of O but careful attention should be paid to this point.

There is a very smooth transition from the 'READY' prompt to the main screen achieved through page-flipping.

When RUN the screen will go blank for about 6 seconds which is very fast considering that initialisation consists of the transfer (in machine code) of half a character set from ROM to RAM, redefinition of characters, setting up of a lot of variables and the implementation of multiple DLI/VBI routines.

Enough reading! Get that liquor and be prepared for a shoot-out!

```
0 REM ******************************
1 REM *        GANGSTERS           *
2 REM *           by               *
3 REM *                            *
4 REM *      GRAHAM ASKEW          *
5 REM *                            *
6 REM ******************************
7 REM
10 SC=559:POKE SC,0:? "K":GOSUB 2000
20 IF T<H1 THEN POKE 51,38:SOUND 0,H1,0,2
25 S=PEEK(632+N):X=(S=7)-(S=11)+((S=13)-(S=14))*V:Z=PEEK(P+X):IF B THEN POKE P-V,0:B=0
30 POKE 51,PC:IF (X=1 OR X=-1) AND Z<WA AND PD/3=INT(PD/3) THEN GOSUB M1:GOTO 70
50 IF X AND Z=L THEN GOSUB 1100:GOTO 80
70 IF PEEK(644+N)=0 AND PS<68 AND T>2 THEN C=1-(PS=PL)*2:GOSUB 1500:GOTO H1
80 FOR Q=L(N)*2 TO 18:NEXT Q
100 IF GB=L AND GD/3=INT(GD/3) THEN GOSUB 1200
110 IF GS=GC THEN GOSUB 1280:GOTO 150
120 IF GD=PD AND L(N)>6 THEN GS=(G>P)+GR
130 Y=1-(GS=GL)*2:M=PEEK(G+Y):IF Y AND M<>PS AND M<>WA THEN GOSUB 1050:GOTO 150
140 IF M=WA THEN GS=(GS=GR)+GR
150 IF EL THEN POKE G,GS-128:POKE MV,166:IF PEEK(G+V)=70 THEN POKE G+V,198:CL=CL+1
160 T=T-1:POSITION 11,23:? #6;T;"  ":POKE G,GS:IF T=0 THEN POP :POKE MV,0:GOSUB 1800:GOTO H2
170 IF XM THEN XM=0:RETURN
180 IF PD=GD THEN C=(G<P)*(G>P-7)*(GS=GR)-(G>P)*(G<P+7)*(GS=GL):IF C THEN GOSUB 1600:IF H=PS THEN 200
190 GOTO V
200 M(N)=M(N)-1:IF M(N)=W+7 THEN GOSUB H5
210 N=N+(NP=2 AND N=0 AND M(1)>W+7)-(N AND M(0)>W+7):PC=N*32+132:IF M(N)>W+7 THEN GOSUB 250:GOSUB R:GOTO V
230 POKE 53,38:FOR Q=W+V TO E+V:SOUND 0,H1,12,D:POKE Q,WA:POKE V0,0:NEXT Q:COLOR 32:PLOT 6,23:DRAWTO 13,23
240 POKE DL+6,6:POKE DL+26,6:POKE DL+27,6:GOSUB 250:GOSUB 2200:GOTO V
250 POKE SC,0:POKE IE,64:POKE LM,0:POKE RM,0:POKE 51,132:POKE 54,D:RETURN
500 POSITION 5,3:? #6;"game  over ":IF NP=2 THEN POSITION 6,6:? #6;"player ";CHR$(N+17)
```




```
510 FOR A=0 TO M1:NEXT A:POKE 50,14:RETURN
1000 IF Z=GS THEN PS=PR+(G<P):POKE P,PS:RETURN
1005 POKE P,PB:P=P+X:PB=Z:PS=PL-(X=1):POKE P,PS:IF EL+PEEK(P+V)=198 THEN POKE P+V,70:CL=CL-1
1006 IF P-CL=E THEN POKE MV,0:POP :GOSUB 1700:GOSUB 250:GOSUB R:GOTO V
1009 IF Z<>BO OR EL THEN RETURN
1010 B=137:POKE P-V,B:FOR Q=1 TO 3:SOUND 0,Q*D,D,D:NEXT Q:S(N)=S(N)+FI:POSITION N*12+1,0:? #6;S(N):PB=0
1020 POKE V0,0:GOSUB M3:RETURN
1050 POKE G,GB:G=G+Y:GS=(Y=-1)+GR:POKE G,GS:GB=M:IF M+EL<>BO THEN RETURN
1060 SOUND 0,H1,D,D:FOR Q=1 TO D:NEXT Q:SOUND 0,H2,D,D:FOR Q=1 TO D:NEXT Q:GB=0:EL=1:POKE V0,0:RETURN
1100 SOUND 0,PD+FI,D,5:P=P+X:PS=68:POKE P,PS:POKE P-X,L:PD=PD+X/V:POKE V0,0
1110 IF EL+PEEK(P+V)=198 THEN POKE P+V,70:CL=CL-1
1120 RETURN
1200 U=PEEK(G+V):A=PEEK(G-V):IF L(N)>8 AND GD<>PD THEN GS=GC:GOTO 1260
1210 IF L(N)>4 AND PD=GD THEN GS=GR+(G>P):RETURN
1220 GS=INT(RND(0)*3+GR):IF GS<GC THEN RETURN
1230 IF L(N)<3 THEN Y=((A<>L AND U=L)-(A=L AND U<>L))*V:IF Y THEN RETURN
1240 IF L(N)<3 THEN Y=INT(RND(0)*2)*40-V:IF PEEK(G+Y)<>L THEN 1270
1250 IF L(N)<3 THEN RETURN
1260 IF GD<>PD THEN Y=((G<P AND U=L)-(G>P AND A=L))*V:IF Y THEN RETURN
1270 GS=INT(RND(0)*2+GR):RETURN
1280 IF PEEK(G+Y)=L THEN SOUND 0,GD+H1,D,5:POKE G,GB:G=G+Y:POKE G,GS:GD=GD+Y/V:POKE V0,0
1290 RETURN
```

continued overleaf

GANGSTERS continued

```
1500 K=0:IF PD<>GD OR P>G+8 OR P<G-8 T
HEN XM=1:GOSUB H1
1510 SOUND 0,5,0,D:FOR S=P+C TO P+C*5
STEP C:H=PEEK(S):IF K=0 AND H>L THEN K
=H
1520 IF K+H=0 THEN POKE S,72
1530 NEXT S:POKE V0,0:IF PD-GD<>SGN(PD
-GD) OR (P>G+7 OR P<G-7)*(PD=GD) THEN
XM=1:GOSUB H1
1540 S=P+C
1550 H=PEEK(S):IF H=72 OR H=L THEN POK
E S,(H=L)*L:S=S+C:GOTO 1550
1555 IF H=BO THEN GOSUB 1900:RETURN
1560 IF H<>GS THEN RETURN
1570 IF EL THEN POKE MV,162
1580 F=PEEK(G-V):POKE G-V,137:POKE G,1
38:FOR A=5 TO 0 STEP -1:SOUND 0,A*V,12
,D:NEXT A:POKE G,GB
1590 S(N)=S(N)+FI:GK=1:IF EL+PEEK(P+V)
=WA THEN POKE P+V,70:CL=CL-1
1595 GOTO 2660
1600 K=0:SOUND 0,5,0,D:FOR S=G+C TO G+
C*INT(RND(0)*2+4) STEP C:H=PEEK(S):IF
K=0 AND (H=PS OR H>L) THEN K=H
1610 IF K+H=0 THEN POKE S,136
1620 NEXT S:POKE V0,0:S=G+C:IF T>1 THE
N T=T-1:POSITION 11,23:? #6;T
1630 H=PEEK(S):IF H=L OR H=136 THEN PO
KE S,(H=L)*L:S=S+C:GOTO 1630
1640 IF H=0 THEN RETURN
1650 IF H=BO THEN GOSUB 1900:RETURN
1660 POKE P,74:FOR A=D TO V:SOUND 0,A,
12,D:NEXT A:POKE P,PB:RESTORE 2800:IF
PB=0 THEN POKE P-V,0
1670 POKE MV,0:FOR U=1 TO 11:READ A:SO
UND 0,A,D,D:SOUND 1,A-2,D,D:READ Q:FOR
 Z=1 TO Q*V-L(N)*Q:NEXT Z
1680 POKE V0,0:SOUND 1,0,0,0:FOR I=1 T
O D-L(N):NEXT I:NEXT U:RETURN
1700 FOR Q=1 TO D:FOR Z=1 TO D:POKE S1
,14:SOUND 0,H2,D,Z:NEXT Z:FOR Z=1 TO V
-L(N):POKE S1,PC
1710 POKE V0,0:NEXT Z:NEXT Q:S(N)=S(N)
+T*L(N):POSITION N*12+1,0:? #6;S(N):L(
N)=L(N)+(L(N)<9):GOSUB M3
1720 FOR A=0 TO H5:NEXT A:RETURN
1800 IF B THEN POKE P-V,0:B=0
1810 POKE P,PS-64:FOR Z=1 TO H1:SOUND
0,Z,D,D:POKE P,2+(PEEK(P)=2):POKE E+32
,(PEEK(E+32)=0)*16:NEXT Z
1820 POKE P,D:FOR Z=0 TO FI:SOUND 0,Z,
0,D:NEXT Z:POKE V0,0:POKE P,PB:FOR Z=0
 TO H5:NEXT Z:RETURN
1900 POKE S,138:FOR Q=0 TO 3:SOUND 0,Q
,12,D:NEXT Q:POKE V0,0:POKE S,0:RETURN

2000 PR=66:PL=67:GR=130:GL=131:GC=132:
L=5:BO=129:WA=199:MV=1601:I1=512:I2=51
3:IE=54286:LE=1:LM=53261:RM=53262
2005 D=10:V=20:FI=50:H1=100:H2=200:H5=
500:J=256:M1=1000:M3=3000:R=2500:NP=1:
S0=708:S1=709:S2=710:S3=711:S4=712
2010 V0=53761:DIM XT(1),S(1),M(1),L(1)
,ML$(32):POKE 53248,32:POKE 53249,208
2020 POKE 53256,1:POKE 53257,1:POKE 70
4,138:POKE 705,138:S=(PEEK(106)-6)*J:P
OKE 106,S/J-1:GRAPHICS 17:POKE SC,0
2030 S(0)=0:S(1)=0:W2=PEEK(89):W=PEEK(
88)+W2*J:E=W+439:POKE S0,14:POKE S1,13
2:POKE S2,0:POKE S3,38
2040 FOR I=1 TO 32:READ A:ML$(I)=CHR$(
A):NEXT I:X=USR(ADR(ML$),57344,S)
2050 FOR I=S+8 TO S+103:READ A:POKE I,
A:NEXT I:POKE S+131,102:POKE S+132,102
:POKE 756,S/J
2060 DATA 104,104,133,204,104,133,203,
104,133,206,104,133,205,162,2
2070 DATA 160,0,177,203,145,205,136,20
8,249,230,204,230,206,202,208,240,96
2080 DATA 8,0,8,8,28,20,20,28,24,60,24
,16,30,24,16,24,24,60,24,8,120,24,8,24
,25,61,25,127,25,25,36,36
2090 DATA 65,127,127,65,65,127,127,65,
255,255,170,85,170,85,255,255,251,251,
251,0,223,223,223,0,0,0,0,0,85,0,0,0
2100 DATA 0,114,69,101,21,21,98,0,73,4
2,0,99,0,42,73,0,255,255,255,255,255,2
55,231,231
2105 DATA 24,102,90,145,145,90,102,24
2110 DL=PEEK(560)+PEEK(561)*J:POKE DL+
3,198:FOR I=1674 TO 1791:READ A:POKE I
,A:NEXT I
2130 DATA 72,173,198,2,24,105,2,141,10
,212,141,198,2,141,24,208,104,64
2140 DATA 72,169,10,141,10,212,141,26,
208,169,172,141,0,2,104,64,72,138,72,1
69,14,162,38,141,10,212,141,22,208
2150 DATA 142,25,208,104,170,169,197,1
41,0,2,104,64,72,138,72,169,166,162,16
6,141,10,212,141,18,208,142,19,208
2160 DATA 104,170,169,222,141,0,2,104,
64,72,138,72,152,72,169,166,162,28,160
,92,141,10,212,141,26,208,142,22
2170 DATA 208,140,23,208,104,168,104,1
70,169,156,141,0,2,104,64
2180 FOR I=1536 TO 1552:READ A:POKE I,
A:NEXT I:FOR I=1568 TO 1619:READ A:POK
E I,A:NEXT I
2181 DATA 104,169,0,133,192,133,194,16
0,32,162,6,169,7,32,92,228,96
2183 DATA 230,192,166,192,224,12,144,5
,169,0,141,7,210,224,15,176,3,76,98,22
8,169,0,133,192,166,194,189,96
2184 DATA 6,141,6,210,169,0,141,7,210,
230,194,166,194,224,4,144,4,169,0,133,
194,76,98,228
2185 FOR I=1632 TO 1635:READ A:POKE I,
A:NEXT I:MU=USR(1536)
```

```
2186 DATA 193,193,217,182
2200 POKE I1,138:POKE I2,6:POKE IE,192
:POKE W+N*12,0:FOR Z=0 TO 1:IF S(Z)>HI
 THEN HI=S(Z)
2230 NEXT Z:IF P THEN POSITION 6,23:?
#6;"hi ";HI
2240 COLOR 135:PLOT 0,2:DRAWTO 19,2:DR
AWTO 19,22:DRAWTO 0,22:DRAWTO 0,2:POKE
 54,D:POSITION 5,4:? #6;"GANGSTERS"
2250 POSITION 2,7:? #6;"BY  GRAHAM ASK
EW":POSITION 7,D:? #6;", 1984":POSITIO
N 2,13:? #6;"OPTION:  playing"
2260 POSITION 2,16:? #6;"SELECT:  leve
l  ":POSITION 2,19:? #6;"START :  to p
lay":FOR A=0 TO 1
2290 IF P*HI AND HI=S(A) THEN POSITION
 A*12,0:? #6;"          ":FOR Q=0 TO V:NEX
T Q:POSITION A*12,0:? #6;"▶";HI
2295 NEXT A:POKE SC,34:Z=PEEK(53279)
2300 IF Z=3 THEN NP=(NP=1)+1:FOR Z=1 T
O NP:SOUND 0,H1,D,D:FOR A=0 TO V:NEXT
A:POKE V0,0:NEXT Z
2310 IF Z=5 THEN LE=LE+1-(LE=9)*9:SOUN
D 0,J-V*LE,D,D:FOR Z=1 TO V:NEXT Z:POK
E V0,0
2315 POKE W+269,NP+208:POKE W+337,LE+2
08
2320 IF Z=6 THEN POKE SC,0:PC=132:N=0:
FOR A=0 TO 1:XT(A)=1:S(A)=0:L(A)=LE:M(
A)=W+D:NEXT A:POKE IE,64:GOTO R
2330 GOTO 2250
2500 TRAP R:POSITION 0,0:? #6;"↰":POKE
 50,94:POKE 52,0:CL=114:PB=0:POKE 89,W
2+6:POKE DL+5,W2+6
2510 POKE 51,PC:POSITION 7,7:? #6;"rea
dy":POSITION 6,D:IF NP=1 THEN ? #6;"
  ":GOTO 2520
2512 ? #6;"player ";CHR$(N+17)
2520 POKE SC,34:POKE 89,W2:Z=19:COLOR
134:FOR Q=4 TO 22 STEP 3:PLOT 1,Q:DRAW
TO Z,Q:NEXT Q:POKE 53,28
2590 COLOR 135:PLOT 0,22:DRAWTO 0,2:PL
OT Z,2:DRAWTO Z,Z:COLOR 139:PLOT 0,1:D
RAWTO Z,1
2600 COLOR 37:FOR Y=3 TO 15 STEP 3:FOR
 A=0 TO 1
2610 X=INT(RND(0)*5+1)*3:LOCATE X,Y+3,
Z:IF Z=37 THEN 2610
2620 PLOT X,Y:DRAWTO X,Y+3:NEXT A:NEXT
 Y:PLOT 3,18:DRAWTO 3,21:PLOT 15,18:DR
AWTO 15,21:T=H5
2630 P=W+61:PS=PR:PD=3:POKE P+V,70:POS
ITION 6,23:? #6;"TIME ";T:FOR Q=W+8 TO
 M(N):POKE Q,PS:NEXT Q
2640 FOR Z=1 TO L(N):FOR Q=P TO P+360
STEP 60:A=INT(RND(0)*18+Q):IF PEEK(A)=
0 THEN POKE A,B0
2650 NEXT Q:NEXT Z
2660 POSITION N*12,0:? #6;"▶";S(N):POS
ITION 0,23:? #6;"lev":IF PB=B0 THEN GO
SUB 1010
2670 IF NP=2 THEN POSITION 13-N*12,0:?
 #6;S(N=0):POSITION 16,23:? #6;"lev":P
OKE E+40-N*16,L(N=0)+16
2680 IF G AND S=G THEN POKE G-V,F
2690 GOSUB M3
2700 G=E:GS=GL:GD=21:POKE G,GS:GB=0:EL
=0:POKE 77,0:POKE 54,138:IF GK THEN GK
=0:POKE V0,0:RETURN
2705 POKE SC,0:POKE DL+6,134:POKE DL+2
6,134:POKE DL+27,134:POKE LM,255:POKE
RM,255:POKE DL+5,W2
2708 POKE I1,156:POKE I2,6:POKE IE,192
:POKE SC,34
2710 FOR Q=D TO V:SOUND 0,FI,D,D:POKE
E+24+N*16,0:POKE M(N),PS:POKE P,0:FOR
Z=1 TO V:NEXT Z:SOUND 0,H1,D,D
2720 POKE E+24+N*16,L(N)+16:POKE M(N),
0:POKE P,PS:FOR Z=1 TO V:NEXT Z:NEXT Q
2730 POKE V0,0:POKE 1573,13-L(N):POKE
1582,16-L(N):POKE MV,162:RETURN
2800 DATA 243,4,243,4,243,1,243,4,204,
4,217,1,217,4,243,1,243,4,255,1,243,6
3000 IF S(N)*XT(N)<R THEN RETURN
3010 XT(N)=0:FOR A=1 TO V:POKE M(N),2+
(PEEK(M(N))=2)*64:SOUND 0,PEEK(M(N))+V
,D,D:NEXT A:M(N)=M(N)+1
3020 POKE V0,0:RETURN
```

■

Review

FILESIXTY Keyboard

Until recently the only alternatives to the flat membrane keyboard on the 400 computer were either to buy an add-on keyboard similar to that found on the 800 and XL series which would normally be fitted by the supplier, or to upgrade to an 800 or XL machine. With the introduction of the FILESIXTY replacement keyboard, a third alternative has become available.

The keyboard consists of a self-adhesive silicon rubber keypad which fits precisely over the existing keyboard of the 400. The keys are raised and of a grey colour with the function of each key shown in white on the top of the key. The keys 'sit' on a brushed steel fascia which is inset into the grey silicon rubber so improving the keypad's rigidity.

The manufacturers claim that the keypad is moisture and dustproof and will not discolour and that the keys have been tested for up to 3½ million depressions. Perhaps the most useful feature is the printing on the steel fascia of the graphics character available for each key when used in conjunction with the CTRL key. No more hunting for manuals!

Reviewed by Phil Griffin

The review sample was easily fitted to my trusty 400 although I found that most of the adhesive preferred to stay on the peel-off backing sheet rather than the keypad. The first thing to say is that the keyboard looks superb and really looks at home on the 400 improving the look of the machine. As far as actually using it, I felt that the best test was to key in a magazine listing and see how things went.

The keys felt quite solid in use and sprang back positively when released, similar to those on a calculator. It soon became apparent however that for the best results you needed to be really precise in pressing them. Hitting a key at an angle normally produced insufficient pressure to register the keypress which made me become extremely dependent on the computer's inbuilt key-click. I also found that it was possible for keys to occasionally get stuck under the metal fascia which was simple to remedy but an annoying delay.

Reviewing an item like this is always a difficult task. What one person dislikes another will love and much depends on whether you find the existing keyboard easy or difficult to use. Personally I am not so sure that the replacement keyboard gives an advantage in use over the standard 400 keyboard but then I am quite used to the flat keyboard.

Initially, the keyboard will be available by mail-order only but distribution is being extended to selected retailers in the near future. Probably the best thing to do is to go along to your local stockist, when appointed, and try one yourself and then decide on its suitability. The keyboard retails at £14.95.

BOOKMARKS

by

H.G. Woodman

In the general magazines Atari programs are few and far between and it is always a problem to remember which page an article or program is on. Those of you with the Atari 1020 printer/plotter can use this program to make book marks which can be pasted to the relevant page enabling you to pinpoint Atari material quickly. I leave just the emblem and title above the page.

You can also of course use the book marks as just that and if your book mark becomes tatty or lost simply print up another!

```
10 REM ******************************
20 REM *          BOOK MARKS        *
30 REM *              BY            *
40 REM *          H.G.Woodman       *
50 REM ******************************
70 POKE 66,1:RESTORE 120:GRAPHICS 8+16
:COUNT=5:POKE 712,10:POKE 710,162:POKE
 709,14:DIM A$(114)
80 DLIST=PEEK(560)+PEEK(561)*256
90 POKE DLIST+3,71
100 READ A:IF A=999 THEN 120
110 COUNT=COUNT+1:POKE DLIST+COUNT,A:G
OTO 100
120 DATA 7,6,6,6,6,6,6,2,2,2
130 DATA 2,2,2,2,2,2,2,2,2,2
140 DATA 2,999
150 POKE DLIST+26,65
160 POKE DLIST+27,32
170 POKE DLIST+28,156
180 POKE 66,0:POKE 87,2
190 POSITION 4,1
200 ? #6;"Book--Marks"
210 POKE 87,1
220 POSITION 8,3
230 ? #6;"by"
240 POSITION 4,5
250 ? #6;"H.G.WOODMAN"
260 POKE 87,0:POKE 752,1
270 POSITION 0,4:POKE 82,0
280 POSITION 0,4
290 A$="This program is for use with t
he ATARI  1020 color printer.":GOSUB 3
50:POKE 752,1
300 ? :? :? :? :A$="Please Press START
 for instructions":GOSUB 350
310 IF PEEK(53279)=6 THEN 370
320 GOTO 310
330 FOR A=1 TO 10:POKE 752,1:? "";:FOR
 B=1 TO 80:NEXT B:POKE 752,0:? "";
340 FOR B=1 TO 80:NEXT B:NEXT A:RETURN
350 FOR A=1 TO LEN(A$):? A$(A,A);:SOUN
D 0,100,10,10:FOR B=1 TO 10:NEXT B
360 SOUND 0,0,0,0:FOR B=1 TO 10:NEXT B
:NEXT A:RETURN
370 GOTO 940
380 DIM D(10,1)
390 GOSUB 820
400 CLOSE #1
410 OPEN #1,8,0,"P:"
420 ? #1;"Ɛ\"
430 FOR I=0 TO 10
440 S=I*3.14159265/5.5
450 D(I,0)=SIN(S)*32+38.4
460 D(I,1)=COS(S)*32-38.4
470 NEXT I
480 C=2:? #1;"M";D(0,0);",";D(0,1)
490 FOR I=1 TO 5
500 C=C+1:IF C>3 THEN C=0
510 ? #1;"C";C:K=0
520 FOR J=1 TO 11
530 K=K+I:IF K>10 THEN K=K-11
540 ? #1;"D";D(K,0);",";D(K,1)
550 NEXT J:NEXT I
560 ? #1;"H"
570 CLOSE #1
580 OPEN #1,8,0,"P:"
590 ? #1;"Ɛ\"
600 ? #1;"M0,-58"
610 ? #1,"S0"
620 ? #1;"P          "
630 ? #1;"Q3"
640 ? #1;"P ATARI"
650 ? #1;"H"
660 ? #1;"C2"
670 CLOSE #1
680 OPEN #1,8,0,"P:"
690 ? #1;"Ɛ\"
700 ? #1;"M0,-58"
710 ? #1;"S0"
720 ? #1;"P          "
730 ? #1;"Q3"
740 ? #1;"PPROGRAM"
750 ? #1;"H"
760 ? #1;"M0-100"
770 GOSUB 1670
780 ? #1,"M0,-200"
790 POKE 764,255
800 IF PEEK(764)=33 THEN GOTO 400
810 GOTO 800
820 GRAPHICS 1+16:POKE 712,10:POKE 709
,10
830 POSITION 0,2
840 ? #6;"    BOOK--MARKS"
850 ? #6;"        BY"
```

continued overleaf

BOOKMARKS continued

```
860 ? #6;"     H.G.WOODMAN"
870 ? #6;"     ***********"
880 ? #6;"  (atari program)"
890 ? #6;"  **************"
900 POSITION 0,10
910 ? #6;"press SPACE BAR to  print bo
ok mark      do not forget to     tear o
ff each one   before pressing"
920 ? #6;"SPACE BAR again"
930 GOTO 790
940 GOTO 1550
950 INPUT A
960 IF A=1 THEN GOTO 380
970 IF A=2 THEN GOTO 1430
980 END
990 OPEN #1,8,0,"P:"
1000 ? #1;"€\"
1010 ? #1;"M0,-10"
1020 CLOSE #1
1030 OPEN #1,8,0,"P:"
1040 ? #1;""
1050 ? #1;"€\"
1060 O=40:A=1:B=1
1070 FOR C=0 TO 3
1080 ? #1;"C";C
1090 FOR Y=40 TO 0 STEP -5
1100 ? #1;"M";O;",";Y*B
1110 ? #1;"D";(40-Y)*A+O;",0"
1120 NEXT Y
1130 IF B=-1 THEN A=-1
1140 B=-B
1150 NEXT C
1160 ? #1;"M0,-18"
1170 CLOSE #1
1180 OPEN #1,8,0,"P:"
1190 ? #1;""
1200 ? #1;"€\"
1210 ? #1;"M0,20"
1220 ? #1,"S0"
1230 ? #1;"P                    "
1240 ? #1;"Q3"
1250 ? #1;"P ATARI"
1260 ? #1;"H"
1270 ? #1;"C2"
1280 CLOSE #1
1290 OPEN #1,8,0,"P:"
1300 ? #1;"€\"
1310 ? #1;"M0,20"
1320 ? #1;"S0"
1330 ? #1;"P                    "
1340 ? #1;"Q3"
1350 ? #1;"PARTICLE"
1360 ? #1;"H"
1370 GOSUB 1700
1380 ? #1;"M0,-200"
1390 CLOSE #1
1400 POKE 764,255
1410 IF PEEK(764)=33 THEN 990
1420 GOTO 1410
1430 GRAPHICS 1+16:POKE 712,10:POKE 70
9,18
1440 POSITION 0,2
1450 ? #6;"     BOOK--MARKS"
1460 ? #6;"          BY"
1470 ? #6;"     H.G.WOODMAN"
1480 ? #6;"     ***********"
1490 ? #6;"  (atari article)"
1500 ? #6;"  **************"
1510 POSITION 0,10
1520 ? #6;"press SPACE BAR to  print b
ook mark      do not forget to     tear
off each one   before pressing"
1530 ? #6;"SPACE BAR again"
1540 GOTO 1400
1550 GRAPHICS 1:POKE 712,10:POKE 709,1
4
1560 POSITION 5,2
1570 ? #6;"book marks"
1580 POSITION 5,3
1590 ? #6;"**********"
1600 POSITION 0,6
1610 ? #6;"choose 1 or 2        and pre
ss return"
1620 POSITION 0,10
1630 ? #6;"1=ATARI PROGRAM"
1640 POSITION 0,12
1650 ? #6;"2=ATARI ARTICLE"
1660 GOTO 950
1670 REM BOOK MARK
1680 ? #1;"€\"
1690 ? #1;"M0,-80"
1700 ? #1;"S6"
1710 ? #1;"Q3"
1720 ? #1;"R180,0"
1730 ? #1;"C3"
1740 ? #1;"PB"
1750 CLOSE #1
1760 OPEN #1,8,0,"P:"
1770 ? #1;"€\"
1780 ? #1;"S6"
1790 ? #1;"Q3"
1800 ? #1;"R30,-25"
1810 ? #1;"C0"
1820 ? #1;"PO"
1830 CLOSE #1
1840 OPEN #1,8,0,"P:"
1850 ? #1;"€\"
1860 ? #1;"S6"
1870 ? #1;"Q3"
1880 ? #1;"R30,-25"
1890 ? #1;"C2"
1900 ? #1;"PO"
1910 CLOSE #1
1920 OPEN #1,8,0,"P:"
1930 ? #1;"€\"
1940 ? #1;"S6"
1950 ? #1;"Q3"
1960 ? #1;"R30,-24"
1970 ? #1;"C1"
1980 ? #1;"PK"
1990 ? #1;"M0,-52"
2000 CLOSE #1
2010 OPEN #1,8,0,"P:"
2020 ? #1;"€\"
2030 ? #1;"S6"
2040 ? #1;"Q3"
2050 ? #1;"R330,-23"
2060 ? #1;"C3"
2070 ? #1;"PM"
2080 CLOSE #1
2090 OPEN #1,8,0,"P:"
2100 ? #1;"€\"
2110 ? #1;"S6"
2120 ? #1;"Q3"
2130 ? #1;"R30,-25"
2140 ? #1;"C0"
2150 ? #1;"PA"
2160 CLOSE #1
2170 OPEN #1,8,0,"P:"
2180 ? #1;"€\"
2190 ? #1;"S6"
2200 ? #1;"Q3"
2210 ? #1;"R30,-25"
2220 ? #1;"C2"
2230 ? #1;"PR"
2240 CLOSE #1
2250 OPEN #1,8,0,"P:"
2260 ? #1;"€\"
2270 ? #1;"S6"
2280 ? #1;"Q3"
2290 ? #1;"R30,-24"
2300 ? #1;"C1"
2310 ? #1;"PK"
2320 ? #1;"M0,-200"
2330 RETURN
```

■

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Issue 3 - includes Calendar - Cricket Maths - Arcade Action - Character Redefinition - Character Generation Utility - Keyboard Techniques -Software Reviews - Master Directory

Issue 4 - includes Lunar V - Arcade Action - Merlin's Magic Square - Memory Mapped Screens - Basic Timing - Grab an Apple - Software Reviews - Disk Sort - First Steps

Issue 5 - includes Target - Memory Mapped Screens - Squares - Arcade Action (Miner 2049er) - Vertical P/M movement - Software Reviews -First Steps - Colour Selector - Line Lister

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Seasons Greetings
Grubs
Going for a Drive
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Demo 21
Sonar Search
Player Missile Graphics
Graphics 8 Text
Using XIO FILL
The Hardware Facts
Return Key Mode
Make Your 410 Work!



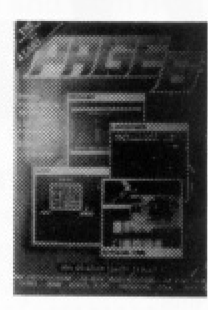
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Another Brick in the Wall
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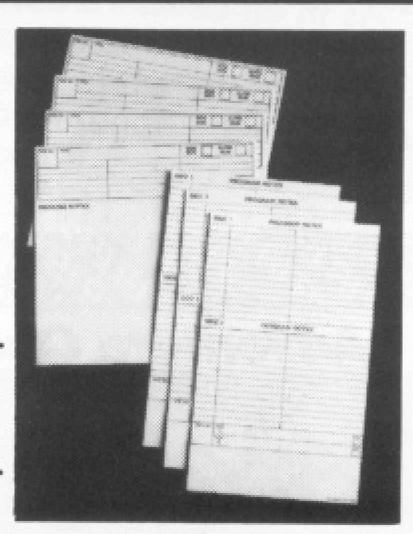
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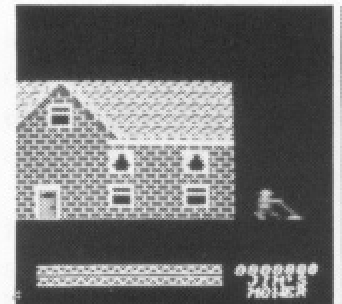
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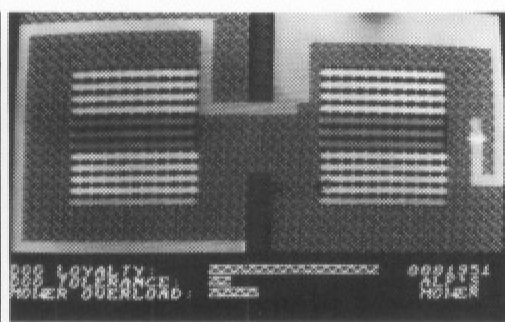
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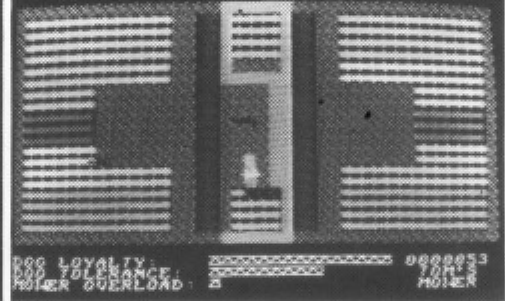
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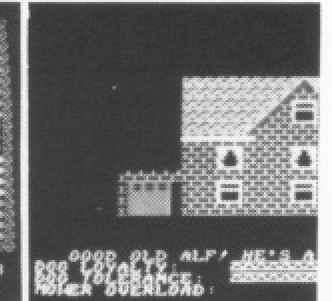
eviews.... The Software Reviews.... The Software Reviews

HOVER BOVVER .... Llamasoft .... 32k cassette .... 1 player .... £7.50 ....









Not as dynamic as Attack of the Mutant Camels but another original idea and a challenging game with a true English theme...mowing the lawn on a hot summer's day in England! This one might even give the youngsters a taste of what awaits them when they pack up their computers to become true middle-aged, middle-class Englishmen!

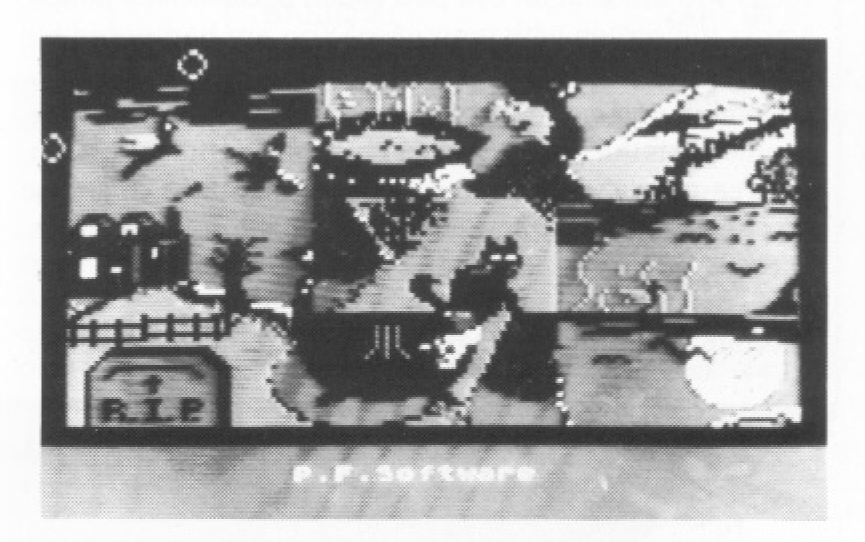
Gordon Bennett (shame about the name) wants to mow the lawn but his lawnmower has rusted up so he borrows Jim's from next door. No need to ask, Jim won't mind, but he does and soon comes after you to get his mower back. Well, the job's got to be done, see him off Rover...Kill! The Gardener looks on with a smile at the antics but his smile soon turns to dismay as you slip off the lawn and cut up his prize flowers. 'I'll get that blasted mower off of him' he says and sets off in hot pursuit. Rover remains faithful in seeing them both off but not for long, his loyalty will hold only for so long and the sound of that mower is driving him spare! Pretty soon he'll come after you as well! This is getting hard work and to make things worse, the faster you mow, the hotter the mower gets until it grinds to a halt. Wait for the mower to cool down, keep the neighbour and the Gardener away and you may finish the first lawn but there are 15 more to go and not a chance for a break to go down the pub!

The game is well thought out and well programmed and has good intro and ending screens together with a high score table and sufficient levels of difficulty for even the most expert player. There are nice interludes where you go and borrow a mower (if Jim gets his back, you can go and borrow Alf's then Tom's) and good music throughout which you can switch off if you wish. Player/Missiles are used to good effect and I love it when the dog goes berserk and bites the neighbour! The flowers could have been made a little more interesting but really that is the only criticism of a challenging and playable game with a somewhat different theme.

I only managed to mow three lawns before I let Tom have his mower back and went down the pub instead, but I am sure you will be mowing for hours on end.

PICTURE TORMENT .... P.F. Software .... 16k cassette .... £3.50 ....

Picture Torment is the latest from P.F.Software and maintains the high standards set by the earlier releases reviewed in issue 11. The program is a sort of Rubik's Picture Puzzle with the choice of dividing the picture into 9, 16, 36 or an incredibly complex 81 pieces, each with five levels of difficulty that scramble the picture with increasing complexity. Additionally, with the 36 or 81 piece puzzles, you can choose to rearrange them in single or double column format. After selecting your level press START and the picture will scramble. Two diamond shapes appear on the top and left hand sides of the screen representing each column or row. Use the joystick to position these alongside the column or row you wish to move and then hold down the joystick button and move the joystick in the appropriate direction.



The program is similar to Picture Puzzle (reviewed in the last issue) but will run in 16k. The real bonus comes when you flip the tape over and get a fully fledged drawing program that allows you to create your own pictures for use in Picture Torment. The utility has options for Plot, Drawto, Colour, Fill, Circle, Square, Load, Save and Wipe and will allow you to create some pretty good pictures to juggle with. One suggestion made by the author is to use the program to teach young children number sequences by drawing the numbers 1 to 9, perhaps with accompanying illustrations representing the numbers, and then use the 9 piece option and level one or two to get them to put the numbers back in the right order. Even if you can't draw, this is easy to do and I drew out the numbers in about 5 minutes. It really does work well. There is no reason why you can't extend this idea by using the 36 piece option and the letters of the alphabet or perhaps rows of shapes such as squares, circles, and triangles.

Another bargain program, complex enough for adults yet simple enough for youngsters. An incredible bargain at £3.50.

Reviewed by Les Ellingham

ORC ATTACK .... Creative Sparks .... 16k ROM £9.95

The idea for this game presumably came from J.R.R.Tolkien's "Lord of the Rings". You control a soldier who must defend the castle wall from the attacking Orcs and their allies. The Orcs' strategy is to climb the wall using scaling ladders which they carry in sections, requiring three sections to reach the top of the wall. At higher levels, the dangerous Ninja Orcs appear who can climb the wall without ladders. There are also bonus screens when the Orcs have a rest while their allies have a try. These include a wizard who can raise the dead, demon trolls who hurl knives and spider-like creatures called Stone Warts.

To defend the castle, the soldier must use the rocks and swords which are lying about. He can drop the rocks which split the ladders in two and send the Orcs hurtling to the ground. He can also use the sword to hack at the Orcs when they reach the battlements. All the time he is hampered by other Orcs who fire crossbows from below. If things get tough he can use his secret weapon - a pot of burning oil. This sets the ground on fire and burns the ladders spelling certain death for the Orcs. At the end of each attack, a pyramid of the dead Orcs is formed at the bottom of the wall.

The graphics for the Orcs and their foes are very cute and the game is well worth £9.95 for a ROM cartridge.

NECROMANCER .... Synapse .... 32k cassette .... 1 player ....

'The age of darkness is upon us, shrouding the sun in a gloomy half fog. Men move cautiously, beasts of the forest scuttle silently from cover to cover and the spell of black magic hangs over the darkened houses creating permanent twilight'.

So the scene is set for Necromancer, the magical arcade/adventure game from Synapse. You control Illuminar, the white wizard, who must defeat Tetragorn, the evil wizard, who rules supreme. To do this you must firstly raise an army of trees (rather like the Tree Ents from Lord of the Rings) in the forest. You move a wisp and, by pressing the joystick button, plant a tree. To obtain more seeds you must hit an eye pod which occasionally jumps across the screen with your wisp. You are hampered by the ogres who stomp down the trees before they are fully grown but you can destroy them with your wisp. A more deadly foe is the Forest Spider who poisons the full grown trees causing a sad face to appear on the trunk. The trees can be cured by wiping away the face if you are quick enough otherwise it's another sad case of Dutch Ent Disease(!).

When you run out of strength you go on to the vaults where you must prevent the spider larva from hatching out by planting your walking trees over the vaults where the the larva grows. The tree's roots will grow through the stonework and the tree crashes down onto the larvae. You must watch out for the Hands of Fate which may grab you or a tree and pull you screaming into the sky. The Hands leave behind question marks which when touched lower a ladder to the next level or leave you with a mystery prize, not always pleasant!. You must also be aware of the Salivating Spider from Sith who spits deadly venom, while the Ceygolian Janitor Rings give you extra strength.

After leaving vault 5 you enter Tetragorn's lair. Here you must fight Zombie Spiders and a Mother Spider whilst removing all of the 13 headstones so that Tetragorn, who you also have to fight, cannot reincarnate himself. When you achieve all of this the forest explodes in a rainbow of colours.

The game has reasonable graphics and a nice little tune but what is more important is that it is totally original, very playable and quite addictive. One of the better Synapse games, definitely worth a look.

TAIL OF BETA LYRAE .... Datamost .... 48k .... 1 player ....

This is without doubt one of the best Scramble type games available for the Atari. It certainly beats Airstrike and Shaft Raider.

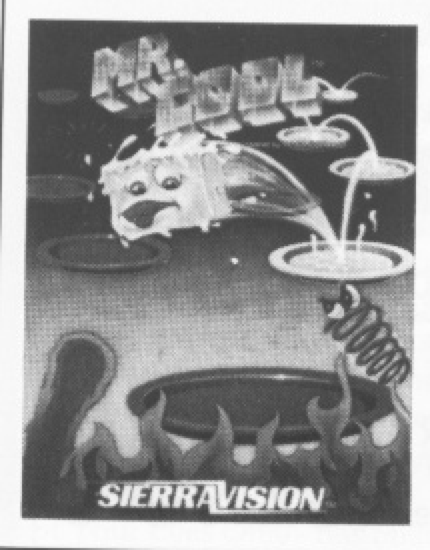
The game is not particularly original. You must pilot a fighter craft into the enemy defences and destroy as many enemy installations as possible. It is the amazing graphics, animation and unique sound that make it stand out.

The game begins with the view from the fighter's cockpit as it hurtles through space. Then you enter the enemy defences where you destroy a huge variety of enemy buildings. You must avoid hitting the mines and being shot down by artillery and surface-to-air missiles. The rolling landscape gives way to an underground cavern which is very treacherous in places until finally you reach the City where you encounter laser cannon.

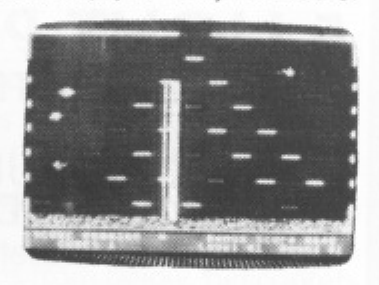
The graphics are brilliant and the fanfare when you reach 5000 points is the best sound available on the Atari. No instructions came with my game and I am not sure if there is some final goal. I have yet to see what lies beyond the City...

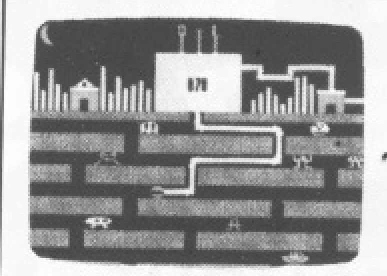
Reviewed by Craig Fuller

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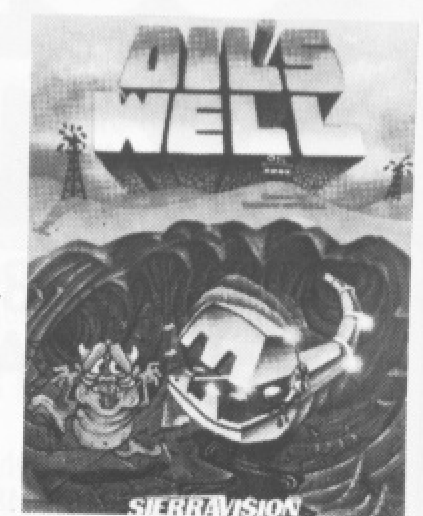


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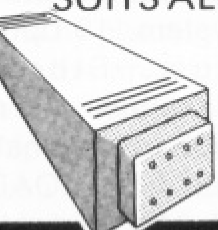
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JAMES BOND .... Parker Bros .... 48k cassette ....

James Bond is one of the newer games from Parker Brothers but is really four games in one since it puts 007 in four different scenarios. You may choose which one you want. In each scenario, Bond drives his Lotus Esprit while being attacked by various foes.

Each scenario is named after a film:

Moonraker - has Bond attacked by large missiles launched from the sea bed and mine-launching submarines while he tries to destroy space mines as they fly overhead.

Diamonds are Forever - where Bond must fight off some very deadly bomb-dropping flying machines while shooting the diamonds in the sky.

For Your Eyes Only - has bullets from below, helicopters and submarines, as well as some tricky mountains which must all be faced by the indomitable Bond.

The Spy Who Loved Me - in which 007 meets some smaller missiles and some deadlier helicopters as well as the odd oil rig he must drive under.

The graphics are not brilliant and the scenarios have little relation to the films but the game is very playable. There is also some nice animation at the beginning showing Bond getting into his car accompanied by the famous Bond music.

The game is not remarkable but Parker Brothers have produced a reasonable computer game from the screen originals.

Craig Fuller

TANK COMMANDER .... Creative Sparks .... 32k cassette .... 1/2 players ....

For those of you who are too long in the tooth or slow on the trigger for conventional shoot-em-ups and cannot get into war games such as Eastern Front, this may be the answer. Tank Commander is a great mixture of strategy and action. You will find yourself in command of a lone tank that must venture forth from its base in the foothills of the western mountains onto a coastal plain defended by computer controlled enemy forces. You are given a birds-eye view of the action which takes place over a terrain consisting of about ten smooth scrolling screens. The terrain includes ranges of low hills, forests, swamps, rivers and roads as well as civilian housing and various military installations. Each mission is different and may require you to rescue a secret agent or go forth and destroy enemy tanks, fuel dumps or command posts. You start with a limited supply of fuel and ammunition which have to be replenished periodically by returning to base.

Your tank is joystick controlled and may take a little bit of getting used to. Forward and backward movement of the handle causes the tank to move forward or reverse, whilst left and right cause the vehicle to turn on the spot. Left or right movement whilst pressing the trigger rotates the gun turret and releasing the trigger fires a shell.

Your tank can travel over any terrain except the hills and rivers. The latter may only be crossed via road bridges. A realistic feature here is that your vehicle's maximum speed varies with the type of terrain being traversed with maximum speed being attained only on the roads. Beware of minefields when travelling across open country and keep an eagle eye out for enemy tanks. These are fairly fast moving and can attack in groups as well as individually. Although fairly fast movers, enemy tanks are slow to fire, at least on the lower skill levels, and are not too difficult to out manoeuvre and destroy.

A more serious threat are fixed gun emplacements usually located near to the enemy command posts. Not only are they difficult to spot, but their guns have a greater range than your own. Use the small ranges of hills as cover when trying to get close enough to destroy these gun emplacements but, beware, the occasional shell may find its way through. The most dangerous weapon possessed by the enemy is a rocket-firing aircraft. Your tank cannot shoot down this aircraft and must try to dodge the missiles. All is not lost however, a warning tone sounds immediately prior to an enemy attack and, providing your reflexs are fast enough, you can press SELECT to call up your own fighter plane. Movement and firing of your aircraft while it is on the screen is controlled with the same joystick. Your own airstrikes will help drain your fuel and ammunition reserves.

When located, and in range, enemy targets can be shelled and blown up from any angle. Explosions produce realistic sound and visual effects. Avoid hitting civilian houses since this reduces your points total. At the end of a successful mission you are awarded bonus points and a new mission, harder than the last and with a different landscape. You start each mission with five lives.

The game has a couple of very useful features. Pressing OPTION at any time during play reveals a map of the complete battlezone and pressing the Space Bar will pause the game. Although generally good, the instructions do not point out that you must press the ESC key to resume play (at least you have to on an 800XL). Loading instructions do not mention that both the OPTION and START must be pressed when switching on XL models during a boot load.

Tank Commander can be played by 1 or 2 players and has 5 levels of difficulty. It is a game that combines arcade action with a degree of strategy to produce an absorbing blend. At a price of £8.95 it should become a firm favourite.

John F. Foden

Reviewed by Craig Fuller and John F. Foden

VARSORT 2

by C.L.Stone

```
10 REM *****************************
11 REM **       VARSORT 2          **
12 REM ** BY C.L. STONE   14/01/84 **
13 REM *****************************
96 REM
97 REM
98 REM === INITIALIZE VARIABLES ==
99 REM
100 DIM A$(128*10),B$(128*40),C$(18),D
$(10),DD$(8),E$(30),F$(40):AN=10:POKE
82,0:POKE 83,39:OPEN #3,4,0,"K:"
110 CLSCRN=10000:MENU=3000:LINE=10040:
CLIN=10090:WAIT=10100:MENMES=10020
120 YELLOW=218:BLACK=0:GREEN=194:RED=5
0:BLUE=114
997 REM
998 REM ===== FETCH FROM DISC =====
999 REM
1000 GRAPHICS 0:POKE 752,1:POKE 710,YE
LLOW:POKE 709,BLACK:TRAP 0:TRAP MENU:A
$=""
1010 D$="D:XXX.DAT":POSITION 8,1:? "□
V  A  R  L  I  S  T  2 ":POSITION 8,2:
? "======================="
1015 CLOSE #1:OPEN #1,4,0,D$:POSITION
5,8:? " FETCHING VARIABLES FROM DISC "
:GOSUB WAIT
1020 GET #1,A:IF A=155 THEN 1035
1025 A$(LEN(A$)+1)=CHR$(A)
1030 GOTO 1020
1035 CLOSE #1
1040 POKE 752,1:? CHR$(125):POSITION 9
,1:? "□STRING TO BE PROCESSED ":POSITI
ON 0,3:GOSUB LINE
1045 COUNT=INT(LEN(A$)/AN):LI=5:PO1=0:
COL=1
1046 FOR A=1 TO COUNT:PO=A*AN
1047 POSITION PO1,LI:? A$(PO-9,PO):LI=
LI+1
1048 IF LI=17 AND COL=1 THEN LI=5:COL=
2:PO1=14:GOTO 1060
1050 IF LI=17 AND COL=2 THEN LI=5:COL=
3:PO1=28:GOTO 1060
1055 IF LI=17 AND COL=3 THEN LI=5:COL=
1:PO1=0:GOTO 1072
1060 NEXT A:GOTO 1074
1072 POSITION 5,21:? "  PRESS ANY KEY 
FOR NEXT PAGE   ";:GET #3,D:GOSUB CLSC
RN
1073 NEXT A
1074 POSITION 8,19:? "No. of Variables
 = ";COUNT:POSITION 8,20:? "Length of
string = ";LEN(A$)
1075 GOSUB MENMES:GOTO MENU
2000 REM
2001 REM =======CREATE===========
2002 REM
2500 GRAPHICS 0:POKE 710,GREEN:POKE 71
2,GREEN:POKE 752,1:B$=""
2505 C$="INPUT VARIABLES":POSITION INT
(40-LEN(C$))/2,2:? C$:? :GOSUB LINE
2510 FOR L=1 TO LEN(A$)/AN:PO=L*AN:PL=
L*BN:POKE 16,64:POKE 53774,122
2515 POSITION 10,9:? "VARIABLE (";L;")
 = ";A$(PO-9,PO)
2520 POSITION 3,11:? " ENTER DESCRIPTI
ON OF VARIABLE USE "
2525 POSITION 3,12:? "       A MAXIMUM O
F 30 CHARACTERS      "
2530 POSITION 5,14:? "................
..............":POSITION 4,14:INPUT E$
2535 F$=A$(PO-9,PO):F$(LEN(F$)+1)=E$:E
$=""
2540 GOSUB CLSCRN:POSITION 0,5:? F$
2541 POSITION 2,22:? "    ANY ALTERATIO
N NEEDED  Y/N ":GET #3,D:IF D=78 OR D=
110 THEN GOTO 2545
2543 F$="":POSITION 0,22:GOSUB CLIN:GO
TO 2515
2545 POSITION 0,22:GOSUB CLIN:B$(PL-39
,PL)=F$:NEXT L:GOSUB MENMES
2997 REM
2998 REM =======   M E N U   ========
2999 REM
3000 GRAPHICS 0:POKE 710,RED:POKE 712,
RED:POKE 752,1:C$=" M E N U ":POSITION
 INT(40-LEN(C$))/2,2:? C$:? :GOSUB LIN
E
3002 AN=10:BN=40:POSITION 0,6
3005 ? "▸↓ <1>  ADD DESCRIPTIONS"
3010 ? "▸↓ <2>  PRINT ON SCREEN "
3020 ? "▸↓ <3>  PRINT ON PAPER  "
3025 ? "▸↓ <4>  SAVE TO DISC    "
3030 ? "▸↓ <5>  END PROGRAM     "
3035 ? :GOSUB LINE:POSITION 9,21:? " E
NTER NUMBER REQUIRED "
3040 GET #3,D
3045 D=D-48:IF D<1 OR D>5 THEN GOTO ME
NU
3050 ON D GOTO 2500,4000,5000,6000,700
0
3997 REM
3998 REM ======== SCREEN ==========
3999 REM
4000 GRAPHICS 0:POKE 710,BLUE:POKE 712
,BLUE:POKE 752,1:POSITION 13,1:? "PROC
ESSED STRING ":POSITION 0,3:GOSUB LINE
4005 COUNT=INT(LEN(B$)/BN):LI=5
```

...a utility for indentifying variables

```
4010 FOR A=1 TO COUNT:PO=A*BN
4015 POSITION 0,LI:? B$(PO-39,PO):LI=L
I+1
4020 IF LI=19 THEN LI=5:POSITION 5,21:
? "  PRESS ANY KEY FOR NEXT PAGE ";:GE
T #3,D:GOSUB CLSCRN
4025 NEXT A
4030 GOSUB MENMES:GOTO MENU
4997 REM
4998 REM ========== PAPER ==========
4999 REM
5000 TRAP 0:TRAP 5005:POSITION 13,11:?
 "INPUT TITLE:  ";:INPUT C$:GOTO 5010
OTO 5010
5005 POSITION 0,21:? " CHECK PRINTER -
 IF OFF - SWITCH ON !!! ":FOR A=1 TO 5
00:NEXT A:GOTO MENU
5010 GOSUB WAIT:LPRINT "    VARIABLES
FOR PROGRAM : ";C$:LPRINT "===========
==============================":LPRIN
T
5015 FOR A=1 TO COUNT:PO=A*BN
5020 LPRINT B$(PO-39,PO-30);"        ";
B$(PO-29,PO)
5025 NEXT A
5030 ? CHR$(253):GOTO MENU
5997 REM
5998 REM ======== DISC ===========
5999 REM
6000 TRAP 0:TRAP MENU:POSITION 5,21:?
"
                                  ":PO
SITION 13,13:? "ENTER FILENAME";:INPUT
 DD$
6005 D$="D:":D$(LEN(D$)+1)=DD$:IF ASC(
D$(3,3))<65 OR D$(3,4)="D:" THEN GOTO
MENU
6010 GOSUB WAIT:? CHR$(253):OPEN #1,8,
0,D$:PRINT #1;B$:CLOSE #1:? CHR$(253):
GOTO MENU
7000 GRAPHICS 0:NEW
9997 REM
9998 REM ==== SUB ROUTINES ====
9999 REM
10000 FOR B=22 TO 5 STEP -1:POSITION 0
,B:? "
       ";:NEXT B:RETURN :REM > CLSCRN
10020 POSITION 5,22:? "    PRESS ANY KE
Y FOR MENU         ":GET #3,D:FOR A=1
TO 250:NEXT A:RETURN :REM > MENU ?
10040 ? "*****************************
***********";:RETURN :REM > LINE
10090 ? "
         ";:RETURN :REM CLIN
10100 POSITION 0,21:? "
 PLEASE WAIT                 ":RETURN :REM
> WAIT
```

This is the second of two Variable utility programs. The first VARSORT1 which you will need to use this program appeared in issue 11.

This is a program which takes the sorted variables put to disc by VARSORT1, allows you to add a 30 letter description of their use and then print them to screen, paper or disc.

A description of the program follows:

GET THE VARIABLES

Line 100 begins by dimensioning the string variables used in this program. 'AN' is then made equal to 10 (this is the length of the individual variable strings within the long string). The screen is made full width, and a channel opened for input from the keyboard.

Line 110 assigns various well used routines to variable names.

Line 120 assigns variables to the colours used. The numbers used are the numbers to be POKEd into the registers.

Line 1000 sets the Graphics mode to 0, clears the curser, POKEs in the colours, sets a TRAP sending the program to the MENU on detecting any fault and empties A$.

Line 1010 sets D$ to equal "D: XXX.DAT", sets the print position and prints the heading Title and underlines it.

Line 1015 begins by a precautionary closing of channel 1, opens channel 1 for input from the above program and prints a couple of messages on screen.

Line 1020 waits for an input from the keyboard, this will be contained in 'A'. 'A' is checked and if 155 (RETURN) then the program goes on to line 1035

Line 1025 adds the character represented by the ATASCII number in 'A' to A$.

Line 1030 sends the program back to line 1020 for another character.

Line 1035 - when RETURN was detected in line 1020 it signified that the file had been fully loaded and this line then closes the channel.

Line 1040 clears the cursor, clears the screen, prints the heading title and draws a line.

Line 1045 makes 'COUNT' equal to the length of A$ divided by the length of the individual string as represented by 'AN'. 'LI' (the screen line number) is set to 5, 'PO1' (the screen print position) is set to zero, 'COL' (the screen column number) is set to 1.

Line 1046 starts a loop 'A' running from 1 to 'COUNT'. 'PO' (representing the position of the individual variable string within the long string, changed on each pass - of course) is set to equal the pass through the loop times the length of the individual variable string.

Line 1047 sets the screen print position, prints the variable and adds 1 to the line counter.

continued overleaf

VARSORT 2 continued

Line 1048 checks 'LI', if 17 then 'COL' is checked, if 1 then 'LI' is reset to equal 5, 'COL' to equal 2, 'PO1' to equal 14 and the program sent to line 1060.
Line 1050 checks 'LI', if 17 then 'COL' is checked, if 2 then 'LI' is reset to equal 5,'COL' to equal 3, 'PO1' to equal 28 and the program sent to line 1060.
Line 1055 checks 'LI', if 17 then 'COL' is checked, if 3 then 'LI' is reset to equal 5, 'COL' to equal 1, 'PO1' to equal zero and the program sent to line 1072.
Line 1060 sends you back for another pass through the loop. When the loop is finished and the variables are printed on screen in three columns, the program passes on to line 1074.
Line 1072 prints a message at the bottom of the screen asking you to Press any Key for another page - this occurs only when the screen is full - pressing any key clears the screen and Line 1073 sends you back for another pass through the loop and so prints more variables.
Line 1074 - when all variables are printed this line prints the total number and the length of the containing string.
Line 1075 prints a message at the bottom of the screen and goes to the Menu.

ADD DESCRIPTIONS

Line 2500 sets the graphics mode to 0, so clearing the screen in the process, POKEs the colours for this section, clears the cursor, empties B$.
Line 2505 establishes the title for this section. centres it. prints it, skips a line and draws a line.
Line 2510 starts a loop 'L' running from 1 to the length of A$ divided by the length of the individual string ('AN'), establishes 'PO' to represent the position of each individual string within the long string (A$), 'PL' to equal the osition of the Individual String (composed of both variable and description) within 'B$'. The BREAK key is then disabled.
Line 2515 causes the variable (and its number in the list) to be printed at roughly a third down the screen.
Lines 2520 to 2525 ask you to enter a description of the variable on the screen.
Line 2530 prints a line of 30 dots and then takes the print position back to one space before the first dot and then asks for an input, which will be held in E$.
Line 2535 makes F$ equal to the variable at present on screen. E$ is added on to the end of F$ and E$ is emptied.
Line 2540 clears the screen and then prints near the top the contents of F$, At the bottom of the screen you are asked if an alteration is needed. 'N' would send you on to line 2545, but any other key will send you to line 2543 which clears F$ and sends you back to line 2515 to have another go.

Line 2545 makes B$ (at the position defined by variable 'PL') equal to F$ and then goes back for another pass through the loop. This continues until the loop is finished and all the variables now have a description tagged on to the end and are all placed in the long string (B$). The program then goes to the 'Press any Key for Menu' subroutine.

MENU

Line 3000 sets the Graphics mode to 0, POKEs the colours for this section, clears the cursor, establishes the title for this section, centres it, prints it, skips a line and draws a line.
Line 3002 sets 'AN' to equal 10, 'BN' to equal 40 and places the print position at the start of the sixth line.
Lines 3005 to 3030 print the items on the Menu. The positions of these lines, after the initial POS. instruction is controlled by the first two characters in each line being an Escape-Tab and an Escape-Shift-Down Arrow.
Line 3035 skips a line and draws a line and then asks for you to input the number of your choice.
Line 3040 awaits an input, just the press of a key.
Line 3045 makes this input (by deducting 48) equal the numbers shown, if they don't match then the program simply goes back to the start of the MENU.
Line 3050 sends the program to the line number as contained in 'D'.

PRINT ON SCREEN

Line 4000 sets the Graphics mode to 0, POKEs the colours, clears the cursor, prints the heading and draws a line.
Line 4005 sets 'COUNT' to equal the length of B$ divided by 'BN' (i.e., the number of variables and descriptions) and sets 'LI' to 5.
Line 4010 starts a loop 'A' running from 1 to 'COUNT', makes 'PO' equal to 'A' times 'BN'.
Line 4015 sets the print position, prints the variables plus their descriptions (as defined by 'PO') and adds 1 to 'LI'.
Line 4020 checks 'LI', if 19 then 'LI' is reset to 5, a message printed at the bottom of the screen - Press any Key. Upon doing so the screen clears and line 4025 sends the program back for another pass through the loop.
Line 4030 - when the loop is done and the variables all printed you are asked to press any key for the Menu.

PRINT OUT?

Line 5000 sets a TRAP for line 5005, prints (on the

MENU and above the item Printer) a request to input the title that you wish the printed copy to bear. The program then skips line 5005.
Line 5005 is the error line, requesting you to check the printer, and then sends the program back to the start of the MENU section.
Line 5010 asks you to Please Wait. The title is then printed to paper.
Line 5015 starts a loop 'A' and 'PO' is again set.
Line 5020 then prints the variable, a gap, and then the description to paper.
Line 5025 goes back for another pass through loop 'A'.
Linu 5030 rings the Bell and then goes back to the Menu.
Line 6000 sets a TRAP to go to MENU. As in the print section, a request is printed above the item 'Disc' on the Menu asking you to enter the Filename under which you wish to save to disc. This input is held in DD$.

FILENAME SUBROUTINE

Line 6005 sets D$ to equal D then DD$ is added to that. The filename is then checked and if found to have two D:'s or a number where a letter should be the program will return to the Menu.
Line 6010 asks you to Please Wait, rings a bell, opens a channel to write to disk using the filename you have input, prints the data to disk, closes the channel, rings the bell and returns to the Menu.

SCREEN DISPLAY SUBROUTINE

Line 10000 creates a loop 'B' which prints a blank line from line 22 to line 5 and then returns.
Line 10020 is the 'Press any key for Menu' routine, which it prints at the bottom of the screen, waits for an input, pauses and returns.
Line 10040 prints a line of asterisks and returns.
Line 10090 prints a blank line and returns.
Line 10100 prints, at the bottom of the screen, a 'Please Wait' message and then returns.

These two programs are very useful for sending in programs to magazines as readers find descriptions of variables used to be helpful. Also I hope that the utilities will enable you to analyse your own programs and maybe improve your programming techniques.

Project

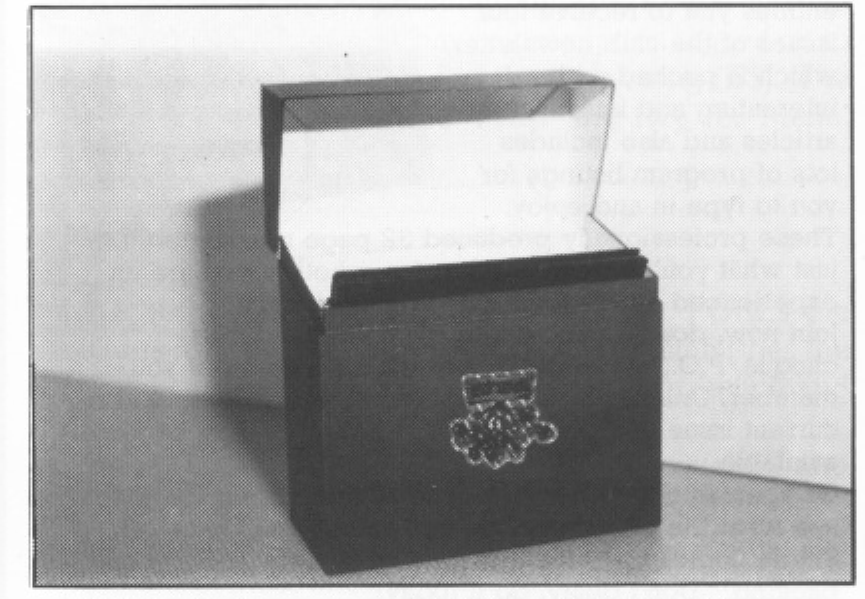
D-I-Y disk box

by Phil Brown

How about trying something for your disk based system which requires no programming knowledge whatsoever? Make yourself a disk box! Phil Brown sent in one he had made and it really is an excellent and sturdy storage box.

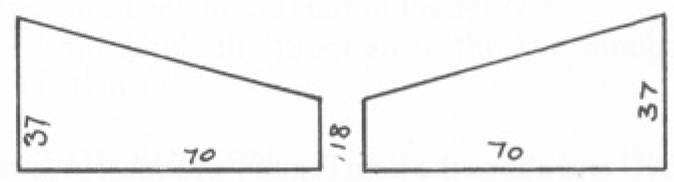
Since purchasing a disk drive I have been amazed at how fast one's disk collection grows and quite soon it becomes a problem to store them. A disk box is the obvious answer but with disks themselves being quite pricey, I did not wish to spend too much on storage. Looking through the catalogues revealed prices between £17 and £30 so I set about making my own and spending the balance on more disks! I have been so pleased with the results that I would like to share the idea with other readers, that is if you are interested in three disk boxes for less than £1!

The box is made of card, is dustproof, anti-static and holds the disks upright with room to flick through for selection. It was designed to hold 20 to 22 disks with room for dividers. The card used came from a local art shop and is DALER ART BOARD which is available in several colours. One sheet will cost you about 80p and will make three storage boxes as detailed here. The only other cost is a tube of glue and your time but spread it out over a few days and you will still have plenty of time on the computer.

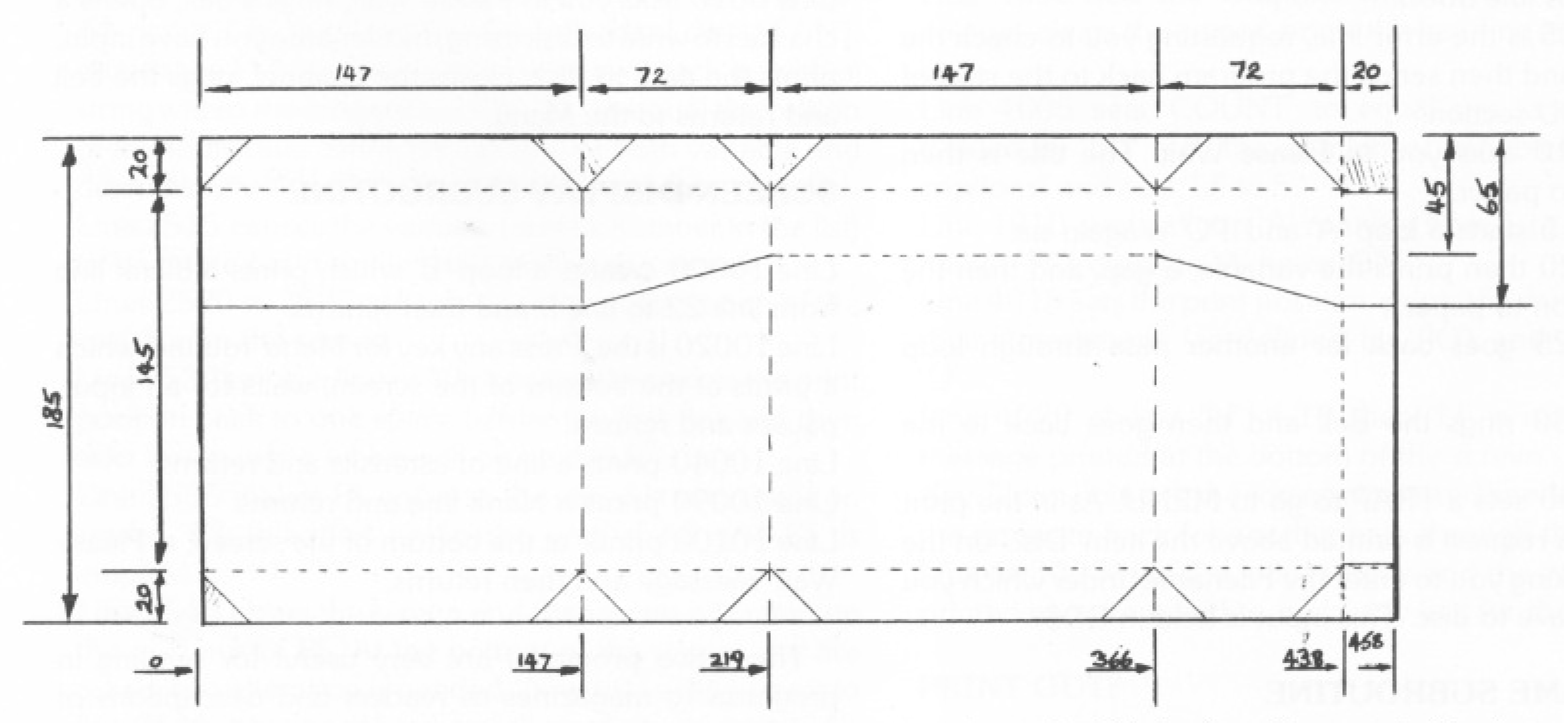


PARTS - Cut from 1mm DALER ART BOARD

A. Main box 185mm x 458mm (see diagram)
B. Base - 145mm x 70mm
C. Top - 146mm x 71mm
D. 2 x side pieces (see diagram)
E. Lip - 144mm x 20mm



Side pieces cut two opposite.



All dimensions in mm.

Cut solid lines - remove shaded areas.

Score dashed lines by cutting lightly about ½mm each side of lines and removing thin strip of card.

ASSEMBLY

1. Cut main box piece and draw, on the reverse, all bold and dashed lines.
2. Cut out the shaded triangular shaped pieces from the main box.
3. Score top and bottom 20mm flaps by cutting ⅓ way through the card ½mm to 1mm each side of the dashed lines and remove the strip of board.
4. Score main folds and ensure everything folds fairly easily with the scored lines on the inside. If it doesn't fold easily scrape some card out of the scored lines.
5. Cut the solid lines which seperate the lid from the base and score, sparingly, the hinge line.
6. Using a wide black felt tip marker, colour the edges of the card which will improve the final appearance.
7. Gently ease the box into a rectangular tube and glue the sides together with a PVA glue such as Evostick W and use clothes pegs to hold for an hour or so.
8. Cut out base plate and top plate, inside side pieces and front inside lip.
9. Check the base plate fits inside the bottom of the box. You will probably need to nick off the corners and cut a sliver off one edge at the corner to fit against the box seam. Glue the base plate from the inside, i.e. with the flaps sitting on your work surface. Put weights inside to hold the base until it is set. Make sure first that it is square.
10. Fit side internal edges so that they protrude approx 10mm above the sides of the box and hold in place with pegs. These side pieces must touch front and back because they stop you squeezing the box when it is in use.
11. Fit front inside lip to line up with the side pieces, gluing each end to the side pieces. Put aside until dry.
12. The top of the lid is left until last to ensure that the top closes square. Close the box and glue the top on to the folded lid flaps and put a weight on top until dry.

Put the box somewhere warm for 24 hours to fully dry out and then you can decorate it with your favourite stickers! The box will stay shut but you can secure it with an elastic band if you take it out with you.

You will now need some disks to put inside and you can buy these with the £25 you have saved from buying a commercial disk box! ●

Renumber by John Owen

Here is a simple routine, written in machine code for speed, that will renumber lines in your BASIC program. The renumber does not tackle line numbers embedded in statements so you will have to renumber these yourself. The best technique is to use variable names for line numbers such as MOVE=50: GOTO MOVE.

To use, simply LIST this program to disk or cassette and then ENTER it with your program in memory. It will attach itself to the end of your program. Type GOTO32758 and give the starting line and line increment that you wish your program to be renumbered to and sit back and wait a few seconds. If you want to use the routine a second time type GOTO 32759 to prevent CODE$ being DIMensioned again.

```
10 REM ******************************
20 REM ***  BASIC LINE RENUMBERER ***
30 REM ***                        ***
40 REM ***    John owen 24/4/84   ***
50 REM ******************************
60 REM
70 REM >>>> RENUMBERER MUST HAVE<<<<<
       >>>LINE NUMBERS 32758-32767<<<
80 REM
90 REM >> ONLY LINE No's RENUMBERED<<
```

```
32758 COM CODE$(103)
32759 RESTORE 32764:T=0:FOR R=1 TO 103
:READ V:CODE$(R)=CHR$(V):T=T+V:NEXT R
32760 IF  NOT T=16018 THEN ? "ERROR(S)
 IN DATA STATEMENT(S):LINES 32764-3276
7 VERIFY WITH SOURCE":STOP
32761 ? "FIRST LINE NUMBER=";:INPUT LN
SRT:? "INCREMENT BETWEEN LINES=";:INPU
T LINESZ
32762 X=USR(ADR(CODE$),LNSRT,LINESZ):R
EM NOW CALL RENUMBER ROUTINE
32763 ? "RENUMBER COMPLETE":END
32764 DATA 104,240,56,104,133,206,104,
133,205,104,133,204,104,133,203,208,4,
165,204,240,38,165,136,133,207,165,137
32765 DATA 133,208,160,0,165,205,145,2
07,200,165,206,145,207,165,205,24,101,
203,133,205,165,206,101,204,133,206
32766 DATA 165,206,201,127,144,14,169,
1,133,205,133,203,169,0,133,206,133,20
4,240,204,200,177,207,24,101,207,133
32767 DATA 207,165,208,105,0,133,208,1
60,0,177,207,201,246,208,190,200,177,2
07,201,127,208,183,96
```
■

TYPO TABLES

The TYPO TABLES are an aid to ensure that you type in the program listings in PAGE 6 correctly. You will require the TYPO listing which appeared in issue 5 which gives full instructions for use of the tables.

NUTTY

Variable checksum = 958171

Line num range	Code	Length
1 - 11	NU	562
12 - 25	RQ	536
26 - 38	EF	469
39 - 53	UC	559
54 - 54	TS	38

VARSORT2

Variable checksum = 847800

Line num range	Code	Length
10 - 120	FF	511
997 - 1040	YR	527
1045 - 1074	NN	525
1075 - 2530	RL	519
2535 - 3005	CT	511
3010 - 4000	CI	451
4005 - 5010	VM	521
5015 - 9997	YH	467
9998 - 10100	CJ	449

GANGSTERS

Variable checksum = 1570243

Line num range	Code	Length
0 - 30	HU	519
50 - 160	EC	507
170 - 250	XM	528
500 - 1050	TK	518
1060 - 1260	DS	529
1270 - 1570	MB	442
1580 - 1660	SV	534
1670 - 1810	XC	506
1820 - 2005	TT	500
2010 - 2050	LW	525
2060 - 2110	IV	538
2130 - 2180	MS	512
2181 - 2240	DO	590
2250 - 2310	UC	549
2315 - 2520	YW	533
2590 - 2640	YZ	526
2650 - 2708	NZ	522
2710 - 3020	TM	445

BOOKMARKS

Variable checksum = 172787

Line num range	Code	Length
10 - 130	ES	480
140 - 250	MO	278
260 - 350	BN	525
360 - 470	CY	319
480 - 590	KE	373
600 - 710	SL	264
720 - 830	RM	302
840 - 950	MO	389
960 - 1070	LB	280
1080 - 1190	OD	261
1200 - 1310	NV	263
1320 - 1430	CK	290
1440 - 1550	AW	439
1560 - 1670	KS	304
1680 - 1790	PE	247
1800 - 1910	FP	244
1920 - 2030	QG	264
2040 - 2150	RS	250
2160 - 2270	UH	255
2280 - 2330	WJ	111

RESCUE MISSION continued from page 16

```
2140 DATA 0000000000001B0C0C0C0C0C0C
0C0C0C0C0C0C0C0C1A0000000000000000
4E21201F0C0C1C1D1E1B0C0C,581
2150 DATA 0C0C0C0C0C0C0C1A4E1B0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C,635
2160 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C00000C0C0C0C0C2300,527
2170 DATA 00000000007D00001B0C0C0C0C
0C0C000000000000000000000000000000
000000000000000000000000,236
2180 DATA 0000000000000000000000000000
0000000000000000000000000000000000
00000C0C0000000000000000,24
2190 DATA 0000000C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C1C1D1E004E
0021201F0C0C0C0C0C0C0C,657
2200 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C,540
2210 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C,540
2220 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C00000000000000000000
0000007C001B0C0C0C0C0C0C,487
2230 DATA 0C0C00000000000000000000000000
0000000000000000000000000000000000
000000000000000000000000,24
2240 DATA 0000000000000000000000000000
0000000000000000000000000000000000
000C0C0C0C0C0C0C0C0C0C0C,132
2250 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C,540
2260 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C,540
2270 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C,540
2280 DATA 0C0C0C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C0C
000000000000000000000000,396
2290 DATA 0000000000000000000000000000
0000000000000000000000000000000000
000000000000000000000000,0
2300 DATA 0000000000000000000000000000
0000000000000C0C0C0C0C0C0C0C0C0C0C
0C0C0C0C0000000000000000,216
2310 DATA 00003C603C0E0E7E3C003C666066
7E7E3C003C6666667E7E3C007C66667C7E6E66
007E6078607E7E7E007E607C,3732
2320 DATA 7070707000666666667E7E7E0060
6060607E7E7E00666666667E3C1800181800018
181800001F044E3F1F0E00FF,3210
2330 DATA FFFFFFFFFFFFFF7F7F3E3E1C1C08
0800101010387CFEFE000000FF000000000003C
6E76667E7E3C00183818187E,4182
2340 DATA 7E7E003C660C187E7E7E007E0C18
0C667E3C000C1C3C6C7E7E0C007E607C06667E
3C003C607C667E7E3C007E06,3228
2350 DATA 0C18383838003C663C667E7E3C00
3C663E060E3C3880C0E0F0F8FCFEFF0103070F
1F3F7FFFE0FCFFFFFFFFFFFF,5501
2360 DATA 000080F0FEFFFFFF0000000000C0
F8FF073FFFFFFFFFFFFF000010F7FFFFFFFF00
000000000031FFFFF7F3F1F0F,5370
2370 DATA 070301FFFEFCF8F0E0C080FFFFFF
FFFFFFFCE0FFFFFFFFEF0800000FFF8C000000
0000FFFFFFFFFFFFF3F07FFFF,8002
2380 DATA FF7F0F010000FF1F0300000000000
000000000000FFFF000000000010101000000
0000011FF000000000000111,1490
2390 DATA FFC0C0C0C0C1F3FFFF0000060F0
F8FDFF000000000377FFFF00000000287CFFFFF
FF3E1041EBFFFFFFFF7F3D98,6540
2400 DATA C0E7FFFFFFE3C19D3DFDFCFFFFFC
F9FBFB8307FF800080808080800FF000000000
0000FF7F40414141401FFFF,6477
2410 DATA 3FFFFFFFFFFFFFC0F0FCFFFCF0C0
00030F3FFF3F0F0300FF7E7E3C3C1818000018
183C3C7E7EFF000000000000,4983
```

■

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Beginners

First Steps

by Mark Hutchinson

After having read my advice about using 'editing' characters, I am sure that a few of you have tried this in one of the other text modes. If so, you will have found that the characters are displayed on the screen rather than perform their editing function. This is because GRAPHICS 1 and GRAPHICS 2 are specialised display modes, whereas GRAPHICS 0 is primarily used for program input, and so has full use of the editor. If you wish to save memory by not using a host of POSITION statements, the answer is very simple. Call the GRAPHICS mode that you require, then fool the operating system into thinking it is in GRAPHICS 0 by POKE 87,0. This will allow you full use of the editing facilities. The only problem is that the OS believes that it has a 40 by 24 screen to work with when, in actual fact, it has a good deal less. This is a minor problem as you, the programmer, will make allowances for it.

I am sure that some people who read this column use a NEC 8023 printer. I, and the Editor, would love to see a NEC(ATARI) user group started so that we can find out more about this wonderful graphics printer and how to use it to the full. Any offers of help to myself or Les please. For those who are interested, this is my first sojourn away from my trusty typewriter to using TINYTEXT (courtesy of PAGE 6) via the Blackthorn interface and, after a few faltering steps, I think I am doing quite well.

I recently received a letter from Paul Pratt asking about tutorials for a beginner. I think that leaving out the manuals was a terrible mistake by ATARI and I hope they change this practice for the expected forthcoming sales drive.*(Some chance! Ed.)* The following recommendations are only my opinion and may differ from yours according to your needs. Please, before you purchase anything (program or book) make sure that you peruse it well.

For the outright beginner 'ATARI BASIC, a self teaching guide' - Albrecht (the Wiley manual) is still an excellent choice, even if it is based on the 400/800. So too is the ATARI basic reference manual. XL guides are in short supply so, although I have not read it, 'Getting started' (600XL) - P. Goode must be worth considering. Next would come a good memory map, 'Mapping the ATARI' - Compute, or the cheaper 'Master Memory Map' - R. Sharer. If you have not been able to afford the price of American magazines, then you could consider the series of Compute books, a compilation of past ATARI articles. Then you could progress on to the 'Technical Notes' and 'De Re ATARI'. Beware of books with games listings and progams of 50 games, you will find far superior listings in magazines.

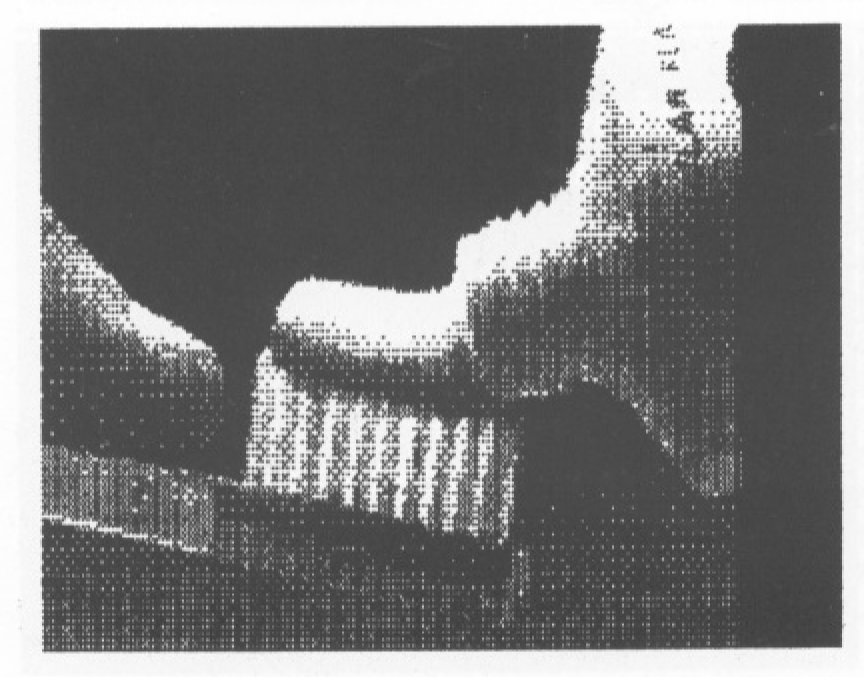
Software is another league. Do you want a tutorial that is not hidden in a game, or do you want a game that you have to decipher to find out what is happening? The BAUG tutorials show you the how and why, then it is up to your imagination and willingness to use the information. The same goes for the Tricky Tutorials. In my opinion, the first 6 are great but the latest ones I find a bit arty and they rely heavily on machine code.

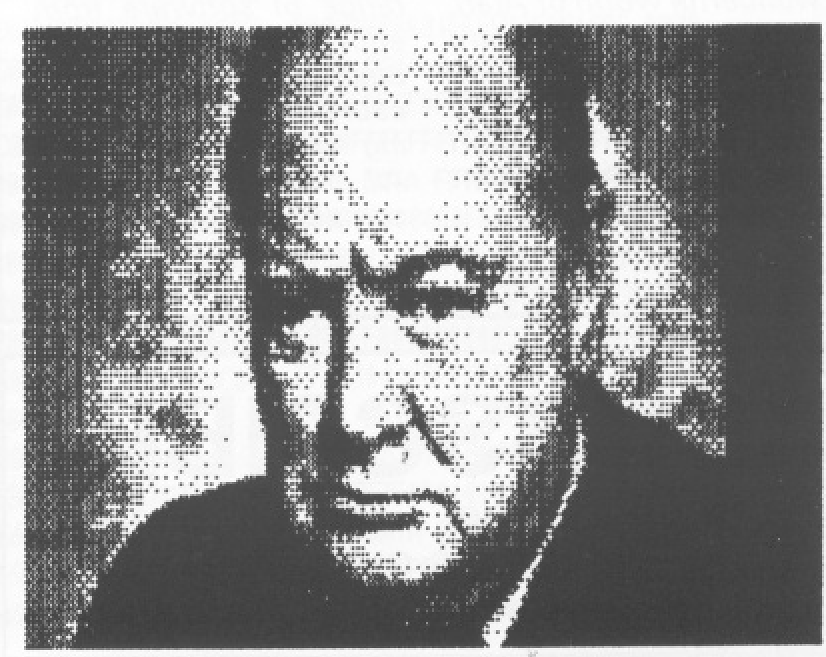
Once you have worked through that lot, you will be at the stage where you want utilities and as that is too big an area, I will now sign off.

Don't forget to write. It is your letters that provide the inspiration!

Write to Mark at BAUG SOFTWARE, P.O.BOX 10, BELFAST, BT10 0DB


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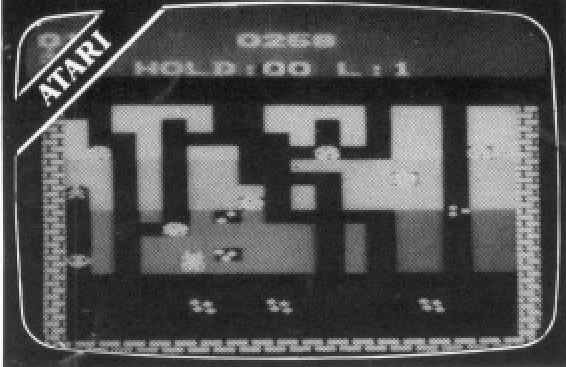
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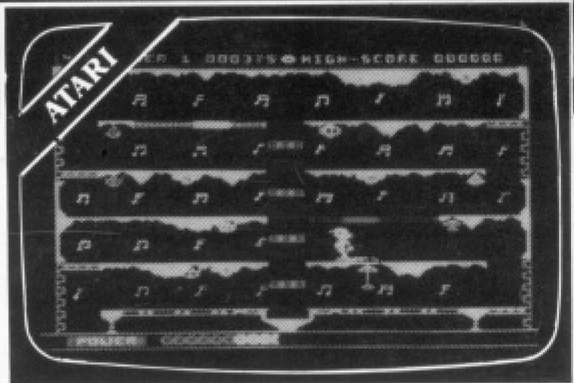


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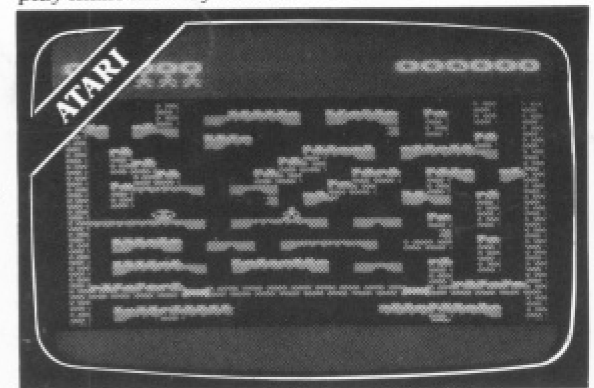
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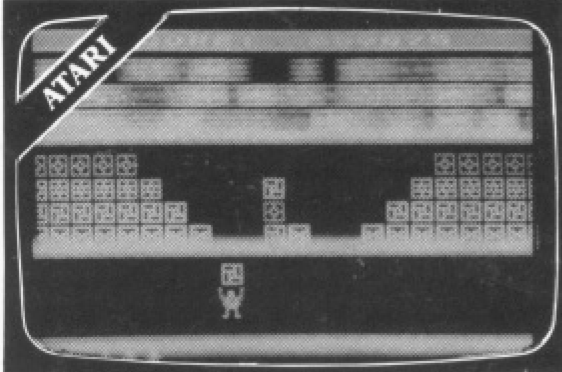
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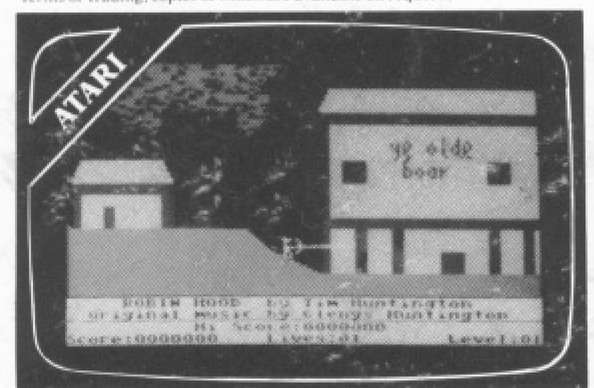
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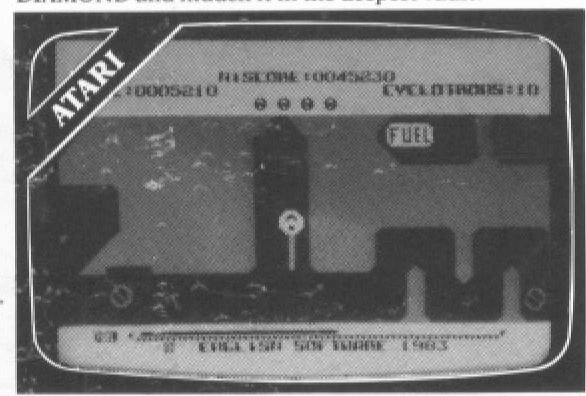
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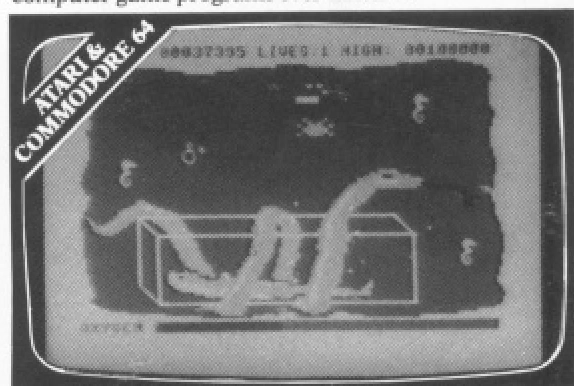
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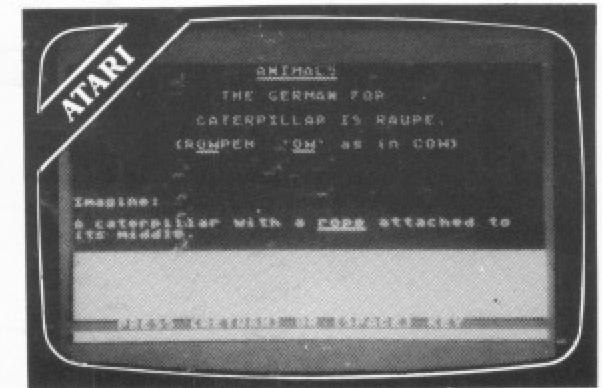


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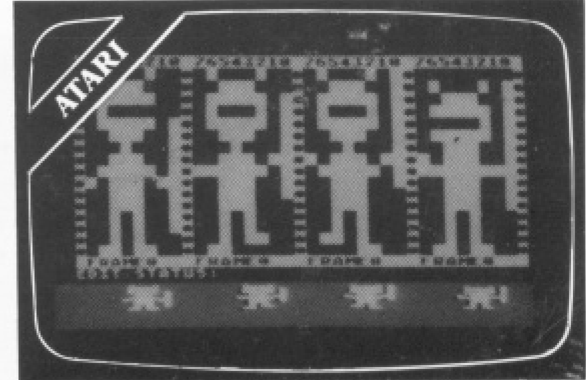
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